Summary

Contents

CONTENTS

In this issue

FINAL ISSUE

This is the final release of State and Regional Indicators Victoria pending the development of a new national output (cat. no. 1367.0), scheduled for release in July 2011. For further information, contact James Darragh on (03) 9615 7049 or email james.darragh@abs.gov.au.

NOTE

State and Regional Indicators, Victoria provides a summary of statistical information for Victoria at the state and or regional level. Statistical highlights from selected indicators are included in each chapter with supporting commentary, graphs and thematic maps.

The statistics presented in this issue are the latest available as at 7 February 2011.

Please address feedback to:

> Post: Manager, Victorian Statistical Analytical Services Section
> Victorian Statistical Leadership Branch
> Australian Bureau of Statistics
> PO Box 2796Y
> Melbourne Vic 3001
> Email: <victoria.statistics@abs.gov.au>
> Fax: (03) 9615 7002

CHANGES IN THIS ISSUE

State and Regional Indicators, Victoria is released on a quarterly basis with chapters updated when new data are available. Chapters and tables are only included when new data are available, so the number of chapters and tables may vary between issues.

This issue includes the following new features:

- Underemployment: A Victorian Perspective feature article
- animated international merchandise trade pyramids for Victoria's 10 major trading partners, and
- spotlights focusing on recent fertility trends in Victoria, and understanding and using time series analysis.

EXPLANATORY NOTES

Explanatory notes in the form found in other ABS publications are not included in **State and Regional Indicators, Victoria**. For detailed information on the statistics, users are directed to the Explanatory notes contained in related ABS publications.

Users are advised that small area estimates presented in this publication should be used with care.

Due to rounding, discrepancies may occur between sums of the component items and totals in individual tables, and between totals in related tables.

INQUIRIES

For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070 or Mizan Laskar on Melbourne (03) 9615 7806.

List of Historical Feature Articles

For issues prior to September 2007, feature articles are only available as part of the original PDF publication and the links below will open the applicable PDF publication.

For issues since September 2007, feature articles are available in HTML format. Up until the March 2009 issue, the articles can also be accessed as part of the original PDF publication.

Issue	Title
Dec 2010	Underemployment: A Victorian Perspective
Jun 2010	Water and Energy Efficiency Elements of Households in Older and Newer Dwellings
Dec 2009	Living Arrangements of Victorians, 2006 — A Study of Diversity and Change Across the Life Courses
Jun 2009	Surplus Bedrooms in Melbourne Homes
Mar 2009	Measuring Victoria's Population
Sep 2008	Victorian Household Preparedness for Emergencies
Jun 2008	Adult Literacy and Life Skills
Mar 2008	Workplace Growth in Victoria 2000-2007
Dec 2007	Child Care Usage in Victoria
Sep 2007	2006 Census: Regional Victoria in Profile
Jun 2007	Water — Sources and Usages
Jun 2007	Personal Safety Survey
Mar 2007	Workplace Growth 2003–2005
Dec 2006	Waste and Recycling
Sep 2006	Trends in Fertility
Jun 2006	Indigenous Vital Statistics
Mar 2006	Victorian Community Indicators
Dec 2005	Profile of Seniors in Victorians
Sep 2005	The Victorian Population 1836–2005
Jun 2005	Criminal Court Outcomes 2003–2004
Sep 2004	Summary of Findings from the 2002 National Aboriginal and Torres Strait Islander Survey
Jun 2004	Building Activity and Interest Rates
Mar 2004	Children aged 0-8 years in Victoria
Sep 2003	Estimating Workplace Growth from Workcover data
Jun 2003	Housing Trends in Melbourne 1999–2002
Sep 2002	Population Change in Victoria, 1991–2001
Jun 2002	2001 Census Geography Issues
Mar 2002	Part-time Employment in Victoria

About this Release

State and Regional Indicators, Victoria (SRIV) is a quarterly publication that contains recently released statistical information about the whole of Victoria. Data is

sourced from ABS and non-ABS collections. It provides measures according to a triple bottom line of economic, social and environment elements.

Most chapters contain a mix of tables, charts and commentary, to provide a basic analysis of recent movements in key economic, social and environmental data. Data is presented for varying geographic classifications, including, Victoria; Melbourne and the Balance of Victoria; down to Local Government Area for some series. The aim of the publication is to provide a picture of the situation of Victoria and enable comparison, both over time and between regions.

Core data, such as Estimated Resident Population, State Final Demand, Labour Force Statistics, Price Indexes, Building Approvals, Air Quality, and Water Storage Volumes is complemented by periodic annual data including the Condition of VicRoads Network, Recorded Crime Offences, Life Expectancy at Birth, Government Owned Housing Stock and others.

As the information is sourced from a wide variety of collections, care needs to be taken when analysing the data as time periods, definitions, methodologies, scope and coverage may differ from table to table. Advice is provided in the publication on such matters.

Expanded Contents

CONTENTS

Spotlight On:

Contents >> Spotlight On:

 SPOTLIGHT ON:

This section contains the following subsection :
   Recent fertility trends in Victoria
   Understanding and using time series estimates
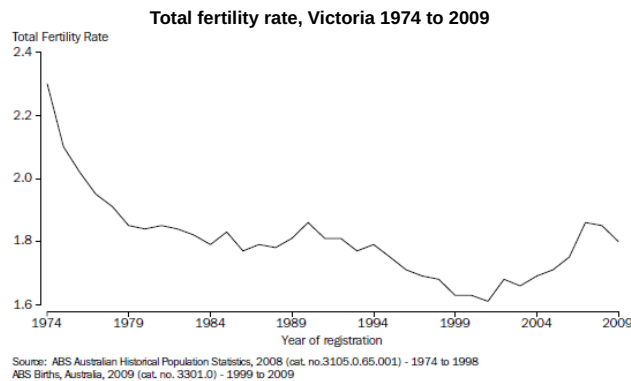
Recent fertility trends in Victoria

RECENT FERTILITY TRENDS IN VICTORIA

The impact of the fertility rate on the age structure of the population may have implications for a wide range of social and economic policy decisions, such as the provision of health care services and educational facilities. This article will draw on recently released data from Births, Australia, 2009 (cat. no. 3301.0) to present an overview[1] of Victorian fertility rates, age of mothers giving birth, and differences between regions to provide insight into changing patterns of fertility across Victoria.

Fertility rates

The total fertility rate (TFR) represents the average number of babies that a woman can expect to bear during her lifetime, assuming current age-specific fertility rates (ASFRs) are experienced. Since 1976, the TFR for Victoria and Australia as a whole has been below replacement level. This means that the average number of babies born to a woman throughout her reproductive life is not enough to replace herself and her partner under current fertility rates. The TFR required for replacement is currently considered to be around 2.1 babies per woman.

Since the peak of the baby boom in 1961 when the TFR reached 3.45 babies per woman in Victoria, fertility has been in long-term decline, reaching its lowest level in 2001 when the TFR dropped to 1.61 babies per woman. During the entire period from 1961 to 2009, with the exception of 1966, Victoria consistently recorded a lower TFR than Australia overall. However, in the last decade, Victoria's TFR has increased by 10%, from 1.63 in 1999 to 1.80 babies per woman in 2009. The graph below shows the patterns of change in Victoria's TFR, over the last 35 years.

Total fertility rate, Victoria 1974 to 2009

Source: ABS Australian Historical Population Statistics, 2008 (cat. no.3105.0.65.001) - 1974 to 1998
ABS Births, Australia, 2009 (cat. no. 3301.0) - 1999 to 2009

State comparisons

Across Australia, all states and territories recorded an increase in the TFR between 1999 and 2009, with the exception of the Northern Territory which recorded a slight decrease. However, TFRs varied substantially between the states and territories. In 2009, Victoria's TFR was the second lowest in Australia, just above the Australian Capital Territory's TFR of 1.74 babies per woman. The highest TFR was recorded in Tasmania (2.18 babies per woman), followed closely by Queensland (2.12 babies per woman).

Total fertility rate, States and Territories, 1999 and 2009

Source: Births, Australia, 2009 (cat. no. 3301.0)
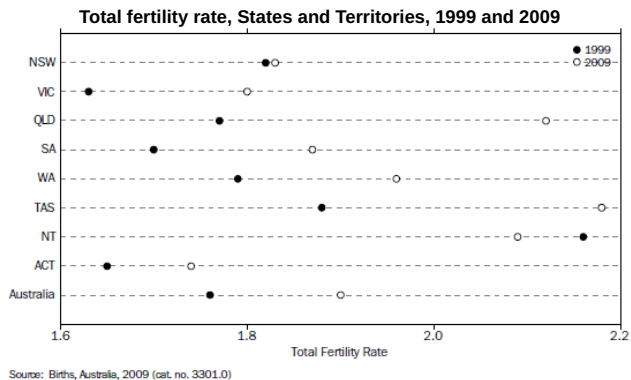
Mother's age at childbirth

Over recent decades, there has been a trend for women in Victoria to delay childbirth. This is evident from the increasing proportion of births attributed to women aged 30 and over, from 53% (31,334) of all births in 1999 to 60% (42,723) in 2009. This trend was notably higher than for Australia overall, for which only 54% of births were attributed to women aged 30 and over in 2009. The median age of women giving birth in Victoria has also increased from 30.4 years in 1999 to 31.5 years in 2009. This has coincided with an increase in the median age of fathers, from 32.6 years in 1999, to 33.7 years in 2009.

The increase in Victoria's TFR over the last decade can be attributed to the rise in the age-specific fertility rate (ASFR) of women aged 30 and over, which has more than offset a decline in the fertility rate of women under 30. Up until 1996, fertility levels in Victoria were highest among women aged 25 to 29. In 1997, women aged 30 to 34 had the highest fertility levels, and have continued to record the highest fertility rate of all age groups since then. Since 1998, the fertility rate for women aged 35 to 39 has consistently exceeded that of women aged 20 to 24.

Women aged 35 to 39 experienced the largest increase in the ASFR, from 49.9 births per 1,000 women in 1999, to 74.4 births per 1,000 women in 2009. The largest decrease was recorded for women aged 25 to 29 years, declining from 99.6 births per 1,000 women in 1999, to 92.8 births per 1,000 women in 2009.

Age-Specific fertility rates(a), Victoria, 1999 and 2009
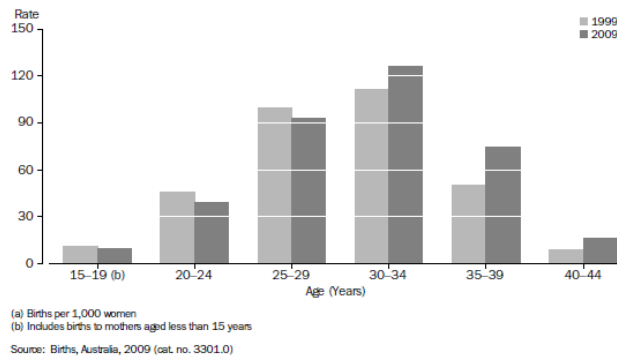
Regional Differences

In Victoria, fertility patterns varied between the different Statistical Divisions (SD) across the state.

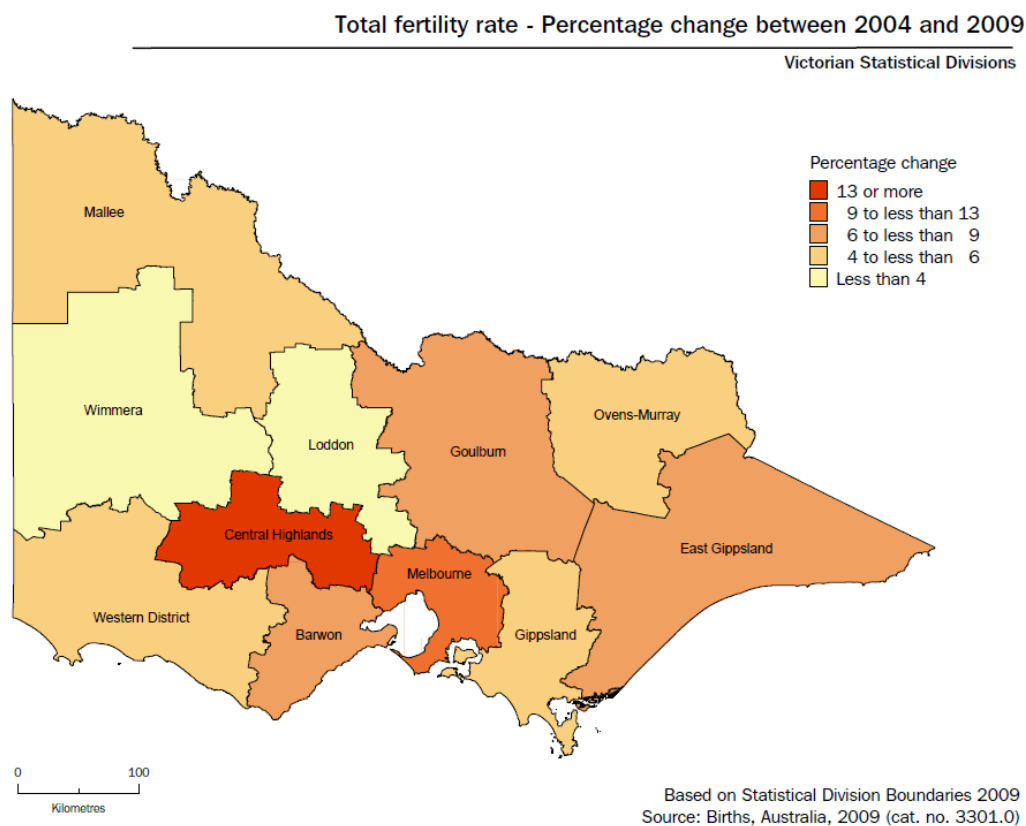In 2009, Melbourne had the lowest TFR of the state (1.77 babies per woman), while the highest TFRs were recorded in Goulburn and East Gippsland (both 2.23 babies per woman). All Victorian SDs recorded an increase in their TFR between 2004 and 2009, however there was considerable variation between different regions. Wimmera recorded the smallest increase from 2.04 to 2.07 babies per woman (an increase of 1.5%), while the Central Highlands recorded the largest increase from 1.78 to 2.02 babies per woman (an increase of 13.5%).

The map below shows changes in fertility rates for Victorian SDs between 2004 and 2009.

Total fertility rate - Percentage change between 2004 and 2009

Victorian Statistical Divisions

Based on Statistical Division Boundaries 2009
Source: Births, Australia, 2009 (cat. no. 3301.0)

There was also a substantial difference between the ASFRs of women in Melbourne and those living in the rest of Victoria. Women in Melbourne were much more likely to give birth later in life than women living in the rest of Victoria, and less likely to give birth in their teenage years or twenties. The largest difference in ASFRs were between women aged 25 to 29 (85.6 births per 1,000 women in Melbourne compared to 128.0 births per 1,000 women in the rest of Victoria). In contrast, the ASFR for women aged 35 to 39 in Melbourne was 80.5 per 1,000 women, compared to 60.3 per 1,000 women for the rest of Victoria. The trend for women in Melbourne to delay childbirth is also reflected in a higher median age of Melbourne mothers (32.0 years) at childbirth, compared to mothers living in other parts of Victoria (30.1 years).

The patterns of ASFRs for women living in Melbourne compared to those living in the rest of Victoria are presented in the graph below.

Age-specific fertility rates(a), Victorian Statistical Divisions, 2009(b)
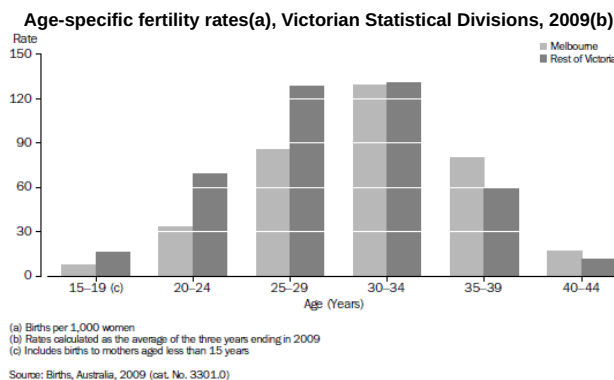
Although both the Victorian and Australian TFR have increased over the last decade, each remains below replacement level. Victorian women, on average, have fewer children during their reproductive lifetime than women in most other states and territories. The implications of lower fertility rates for the size and structure of the population may impact on a wide range of social and economic policy decisions now and into the future.

For further information about fertility in Victoria (including LGA and SLA level data), as well as explanatory notes and a detailed glossary of terms, see Births, Australia 2009 (cat. no. 3301.0).

END NOTE

1 This spotlight includes commentary on movements in estimates between different time periods, as well as other comparisons between categories or geographic regions. Testing of statistical significance has not been undertaken, therefore some of the commentary may refer to movements or comparisons which are not statistically significant.

Understanding and using time series estimates

Contents >> Spotlight On: >> Understanding and using time series estimates

UNDERSTANDING AND USING TIME SERIES ESTIMATES

Most ABS economic and socio-economic datasets contain time series estimates. Time series estimates are very useful for analysing change over time, however in order to correctly use the estimates and get the best out of them, an understanding of what they are, what seasonal adjustment is, and some of the common issues associated with seasonal adjustment is required.

The following article uses Victorian Retail Trade and Building Approvals data to demonstrate the time series concepts described. All graphs are in current prices. This means that estimates are valued at the prices of the period to which the observation relates. For example, estimates for 2007 are valued using 2007 prices.

What is a time series?

A time series is a collection of consistently defined data items which are measured regularly and repeatedly. For example, measuring the value of retail sales in Victoria each month of the year would result in a time series. This is because 'monthly retail sales in Victoria' is being consistently measured, and repeated for every month. Data items measured irregularly or only once, while still useful for many purposes, would not constitute what the ABS calls a time series, and could not be analysed in the same way as time series estimates.

Time series are of interest for economic analysis because they help identify certain cycles, such as business cycles, and turning points in those cycles. Time series are also used for analysing the relationship between series and identifying underlying patterns in data. Some analysts also use time series for modelling and forecasting.

Types of time series estimates

Time series data can be output as original, seasonally adjusted or as trend estimates. An original time series contains the original, observed data from a survey, and represents what actually happened to the data item at a certain point in time. The original series can be rendered into three components: the trend (long term direction), the seasonal (systematic, calendar related effects) and the irregular (unsystematic, short term fluctuations).

Original time series have to go through a process of adjustment in order for seasonally adjusted and trend estimates to be produced. A seasonally adjusted series is formed by removing the seasonal effects from the original series. A trend series is then derived by smoothing out any remaining irregular influences from the seasonally adjusted series. As there are limitations to the type of time series analysis that can be conducted with original estimates, the seasonally adjusted and trend series may need to be produced.

Below are the different types of time series and the components which make up each type.

Time series components

Time series estimates	Seasonal	Irregular	Trend
Original	✓	✓	✓
Seasonally Adjusted		✓	✓
Trend			✓

Seasonal effects and identifying seasonality

Seasonal effects are predictable, calendar related effects that happen the same way, at the same time every year, or sometimes recur a few times a year. Seasonal effects are fairly stable with respect to timing (when they happen), direction (whether the data fluctuates) and magnitude (by how much the data fluctuates). For example, consumers tend to increase their retail spending at Christmas, meaning that retail sales go up in December and drop back down again in January. Another example of a seasonal effect is the increase in water consumption during summer due to warmer weather.

Some seasonal effects are not precisely annual, however their timing can still be predicted. These seasonal effects are known as moving holidays or trading day effects. Easter is a moving holiday as the date at which Easter occurs changes every year, however the date it will fall on can be predicted in advance. As Easter sometimes falls in March and sometimes in April, the change in months can have a large effect on the activity for certain series, such as tourist accommodation.

A trading day effect relates to the number of times that each day of the week occurs during any given month. As different days of the week often have different levels of activity, the observed figure for any month may include the effect of having certain extra days. For example, in Australia, generally more cars are sold on Wednesdays than on Saturdays (ABS, Customised report, 2010). Therefore, any month which contains five Wednesdays is more likely to have higher sales than other months with five Saturdays.

Seasonality in an original time series can be identified by regularly spaced peaks and troughs which have a consistent direction and approximately the same magnitude every year. The graph below depicts a strong seasonal series. There is an obvious large seasonal increase in retail sales in Victoria each December, due to Christmas shopping. The magnitude of the seasonal component stays fairly consistent, while the underlying direction of the data increases over time. A trading day effect can also be observed in the graph, with a dip in turnover occurring each February. This lower level of retail activity is due to February having fewer days than other months.

Retail turnover, Victoria

Seasonal adjustment

Seasonal adjustment is an analytical technique that estimates and then removes seasonal effects from an original series. Original data need to be seasonally adjusted in order to reveal to analysts an estimate of the true underlying movement in the series (the trend), as well as certain non-seasonal characteristics (irregular components). Removing seasonal patterns can help analysts better understand what has been happening to the data by enabling them to see the effects of other non-seasonal influences.

Similar to the graph above, the graph below also highlights retail turnover in Victoria, however the seasonal component in the original series has been estimated and removed to form the seasonally adjusted series. As a consequence, the peaks in December retail sales have been smoothed out due to the seasonal adjustment process, leaving just the underlying direction of the data (the trend) and any irregular component.

Retail turnover, Victoria

Any series that contains seasonal patterns should be seasonally adjusted in order to be able to identify the underlying direction of the data. However, if the data has a very strong irregular component or has weak seasonal patterns it may be difficult to seasonally adjust. This means that the seasonal patterns will be harder to identify and the seasonally adjusted estimates will be less reliable. In these cases, the ABS will issue a caution with the published data.

Irregular components

The irregular component results from short term fluctuations in the data which are neither systematic nor predictable. The irregular component can also be referred to as the residual component, or the volatility or noise in a series.

Most time series contain some degree of volatility or noise, causing original and seasonally adjusted values to fluctuate around the general trend level. For example, crop yields are naturally volatile due to factors such as the weather. The impact of the irregular component can be seen in a seasonally adjusted series, but is smoothed out of a trend series in order for the underlying direction of the data to be identified.

Highly volatile series contain almost no regular patterns, meaning they are dominated by their irregular component. This can make it very difficult to identify the seasonality and trend, and thus to gain an understanding of what has been happening to the data over time. An example of a very irregular series can be seen in the graph below. It is difficult to tell from the graph whether the short term movements in the value of non-residential building approvals in Victoria is caused by seasonal or irregular influences. This is why the ABS does not publish seasonally adjusted estimates for the value of non-residential building approvals in Victoria.

Value of non-residential building approvals, All sectors, Victoria
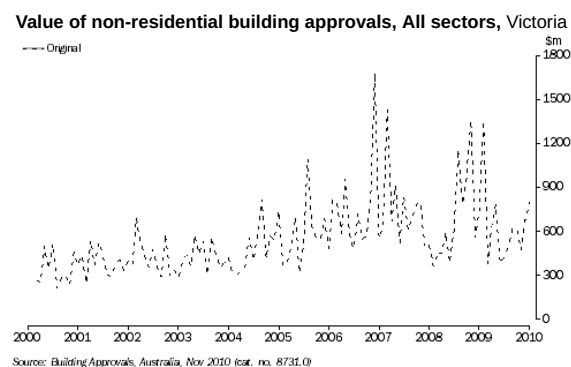
Trends

The trend component is defined as the long term movement in a series. The trend highlights the underlying direction of the data, and is formed once the irregular components have been smoothed out of the seasonally adjusted series. The underlying direction is typically driven by influences such as price inflation (for time series in current prices only), population growth, general economic development and changing consumer habits. Trend estimates are usually directly comparable at different points in time as they have had any seasonal effects and short term fluctuations removed. Trend estimates are revised as new original estimates

become available. This is to ensure that the ABS is providing the most up-to-date and best possible estimate.

The graph below again highlights retail turnover in Victoria. The graph shows a strongly seasonal original series, and a seasonally adjusted series with a few irregular components. The trend series shows the general long term movement of the data in the absence of any seasonal and irregular effects. The graph shows that despite some slowing in the trend growth around 2004 and 2005, monthly retail turnover in Victoria has been gradually and steadily increasing over the past ten years.

Retail turnover, Victoria

Source: Retail Trade, Australia, Nov 2010 (cat. no. 8501.0)

When to use different types of time series estimates

Time series data may be available as original, seasonally adjusted or trend estimates. Therefore it is important to understand that these three separate indicators all describe different aspects of the same data, and are useful for different analytical purposes.

Original estimates

Original estimates are the best estimates that can be made of the level of activity at any particular point in time. As the original series contains all three time series components it can be useful for identifying peaks and troughs around which business or government may wish to plan. For example, in the graph below, the peaks in the retail clothing original series may be of use to employers for forecasting when busy periods are likely to occur in the future, allowing them to roster on extra staff or to order more stock.

Retail turnover, Clothing retailing, Victoria

Source: Retail Trade, Australia, Nov 2010 (cat. no. 8501.0)

Residual noise, seasonal patterns and the underlying direction of the series make it difficult to compare original estimates at different points in time. If month-to-month movements are compared using an original series, seasonal effects will often be seen, and they will usually dominate any month-to-month movement. In the original series in the graph above, the clothing sales go up in December and drop back down again in January. If a month-to-month comparison was made from December to January it would seem reasonable to say that retail clothing sales underwent a large decline. However, once the seasonally adjusted and trend estimates are derived, it can be seen that the retail clothing sales have been predominantly increasing over time.

In general, original estimates should not be used to calculate year-to-year movements. This is because a comparison of original data from the same period each year does not completely remove all seasonal effects. Moving holidays, such as Easter and Chinese New Year, fall in different periods each year, hence they will distort observations. For example, Easter occurs in April for most years, but if Easter falls in March, the level of activity can vary greatly for that month for some series. A comparison of different time points using original estimates will also ignore trading day effects if the two periods have different compositions of trading days.

There are occasions when original data is suitable for making specific comparisons, such as when the user is wanting to measure the effects of seasonality. Examples include:

- determining the impact of moving holidays, such as the impact of Chinese New Year on visitor arrivals to Australia;
- determining the difference in activity due to seasonal factors, such as how much more Victorians spend on clothes in December compared to other months.

Seasonally adjusted estimates

Seasonal patterns are removed from seasonally adjusted data, however residual noise and irregular influences are still present. Seasonally adjusted estimates can be used to compare period to period changes, however, they are recommended to be used with caution due to residual noise still present in the series.

Seasonally adjusted estimates are useful when the user is trying to measure the impact of an irregular event, such as 'was that advertising campaign effective in increasing sales?'. As the seasonal component has been removed, only the underlying direction and the irregular component remains. If a larger than normal irregular component was observed in the month that the advertising campaign was running, then it could be a good indicator that the campaign was effective in increasing sales. However, it is important to keep in mind that it may not have been the only factor contributing to an increase in sales. It is also a good idea to compare the seasonally adjusted series with the ABS trend series when investigating the impact of irregular events.

Trend estimates

The trend captures the long-term behaviour of the series, as well as the various medium-term business cycles. In contrast to an original series, or a noisy seasonally adjusted series, the trend does not frequently change direction from period to period and in fact, trend movements are generally quite smooth and gradual in comparison.

As such, trend estimates are directly comparable at different points in time, making them the most appropriate estimate for comparing month-to-month and quarter-to-quarter changes. Trend estimates are also the most suitable option for comparing year apart changes. However, it is important to note that recent

estimates, typically the last three or four, may be revised as new original estimates become available.

Retail turnover, Liquor retailing, Victoria

Source: Retail Trade, Australia, Nov 2010 (cat. no. 8501.0)

The graph above, liquor retailing in Victoria, shows the original, seasonally adjusted and the trend series. Strong seasonal factors can be seen in the original series around October, November and peaking in December. These seasonal cycles have been estimated and removed in the seasonally adjusted series, but some volatility still remains. Both the seasonal cycles and the volatility have been removed from the trend series. While the original series would be useful for identifying the peak periods in liquor retailing in Victoria, period to period comparisons would not tell an accurate story of what the liquor retail market is doing over time. Thus it is better to use the seasonally adjusted, and preferably the trend series to compare changes in the level of activity for different time periods.

Analysis advice for all types of estimates

When comparing year-to-year data, regardless of the type of time series estimate being used, a major disadvantage for analysts are time delays in the identification of turning points. Turning points occur when the direction of the underlying level of the series changes, for example, when a consistently decreasing series begins to rise steadily. In making year-to-year comparisons, a rise in a previously decreasing series may not be identified until it has actually been rising for quite some time. For more information, refer to Information Paper: A Guide to Interpreting Time Series - Monitoring Trends, 2003 (cat. no. 1349.0).

It is also important to note that for some analysis questions, more than one type of series may need to be considered. For example, few retailers would hire large numbers of new staff in late December, because they can see from looking at a typical retail turnover original series, that historically sales decrease in January. However, they may look at the trend or seasonally adjusted series to plan for the employment of additional staff throughout the year, if the underlying direction of retail sales has been increasing.

Other considerations for analysing time series estimates

There are many important points and issues which need to be considered when conducting time series analysis. Some key areas are discussed below.

Stock and flow series

Original, seasonally adjusted and trend time series estimates can be classified into two different types: stock and flow. Stock series are measures of activity at a point in time and can be thought of as 'stocktakes'. For example, the Monthly Labour Force is a stock measure because it takes stock of whether a person was employed or unemployed in the reference week. Other examples of stock series include inventories and estimated resident population.

Flow series are a measure of activity over a period, such as the number of bicycles sold in a month. Manufacturing is a flow measure because a certain amount of product is produced each day. These amounts are then summed to give a total volume of production for a given reporting period. Other examples of flow series include retail trade, balance of payments, housing finance and capital expenditure. Flow series often contain trading day effects, for example, one month in a series may contain five Saturdays and another month may contain five Wednesdays, which may impact on the level of activity for each month. These trading day effects have been removed from ABS seasonally adjusted and trend estimates, but remain in the original estimates.

Trend break

Although a time series is a collection of consistently measured data items, sometimes real world effects can occur which result in an abrupt change to the level of activity in a series. This is called a structural break, or can often be referred to as a trend break.

A trend break is an abrupt but sustained change in the underlying level of a trend series. In general, a change needs to be reflected by at least six months or three quarters of raised or lowered levels in order to be considered a trend break. If the span of the deviating values is shorter than this period, then they can be classified as extreme values. Such changes in the level of a series are of concern for time series analysis as they can distort trend estimates of surrounding time periods if a trend break is not inserted. Trend breaks are inserted into, and identified within, published ABS trend estimates as required.

A trend break may be caused by:

- changes in population - for example when St. George building society became a bank this led to a fall in the number of housing loans by non-bank financial institutions
- changes in the way a population is measured - for example in the ABS publication, Livestock Products, Australia(footnote 1) , calves greater than 91 kilograms in weight were categorised as 'cattle' up until July 2009, when they began to be included in the 'other calves' category instead
- economic policy decisions - for example the introduction of the GST; or
- major business events - for example commissioning a new mine, the collapse of a large corporation.

The trend series in the graph below shows that when the GST was introduced in July 2000, there was a sudden drop in the general level of retail turnover in electrical and electronic goods retailing in Victoria. This drop in activity was identified as a trend break as the lowered retail turnover levels continued for longer than six months.

Retail turnover, Electrical and electronic goods retailing, Victoria

Source: Retail Trade, Australia, Nov 2010 (cat. no. 8501.0)
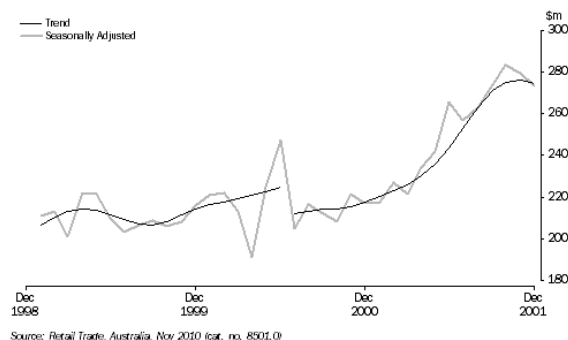
Seasonal breaks

The seasonal adjustment process used by the ABS allows for moving seasonality in a time series; that is a gradual evolution of seasonal patterns over time. However, an abrupt and permanent change in the seasonal pattern is known as a seasonal break, which the ABS identifies and corrects. Seasonal breaks are generally caused by changes in the coverage of a survey, social traditions, administrative practices or technological innovations. In the absence of external information quantifying the change in seasonality, at least three years of data is required before a seasonal break can be confirmed and a correction can be made.

When a seasonal break occurs, the surrounding seasonal factor estimates are distorted unless a correction is applied. An uncorrected seasonal break can result in some seasonality remaining present in the seasonally adjusted estimates. Seasonally adjusted estimates in the region of an uncorrected seasonal break may appear more volatile; and since the trend is derived from the seasonally adjusted series, trend estimates may be indirectly distorted.

Extreme values

Most time series contain some level of noise or volatility. On occasions when the degree of irregularity is unusually large, the values can deviate from the trend by a large margin, resulting in an extreme value. Some examples of the causes of extreme values include adverse natural events (floods), industrial disputes, or the implementation of a new government policy.

Extreme values need to be identified and corrected so that they do not distort the path of the trend series. The trend series is intended as a measure of underlying direction, or long term growth, so it is not desirable for it to respond to one-off, irregular movements.

In the graph below, the seasonally adjusted series for retail turnover in department stores in Victoria is quite volatile with many irregular values. Several large extreme values can be seen in the seasonally adjusted series in late 2008 and early 2009. These irregular values were due in part to people spending their government economic stimulus payments. As these extreme values were attributed to real world effects and were considered abnormal, they have been removed from the trend estimates, meaning the trend series does not rise and fall with these irregular values and they do not form part of the underlying direction.

Retail turnover, Department stores, Victoria

Source: Retail Trade, Australia, Nov 2010 (cat. no. 8501.0)

Revisions to time series

Seasonally adjusted and trend estimates routinely get revised as new estimates become available. For example, the trend estimates for retail trade for December 2010 will be revised as information is collected for January 2011, and again when information is collected for February 2011. For both monthly and quarterly series, once three cycles have passed revisions to trend estimates usually become negligible. Revisions to seasonally adjusted estimates may be noticeable up to three years later, with the number of revisions required being dependent on the time series. Revisions to original estimates are rare.

It is important to note that the ABS revises estimates so that the most accurate possible estimates, at a point in time, are released.

For more information, refer to Time Series Analysis Frequently Asked Questions, 2003 (cat. no. 1346.0.55.002) Issues with Seasonal Adjustment.

Further information

The ABS produces a number of publications to assist in understanding and analysing time series. For further information refer to:

- Time Series Analysis Frequently Asked Questions, 2003 (cat. no. 1346.0.55.002)
- Information Paper: A Guide to Interpreting Time Series - Monitoring Trends, 2003 (cat. no. 1349.0)
- Information Paper: An Introductory Course on Time Series Analysis - Electronic Delivery, Jan 2005 (cat. no. 1346.0.55.001).

For more information on Retail Trade data, refer to Retail Trade Australia, Dec 2010 (cat. no. 8501.0).

For more information on Building Approvals data, refer to Building Approvals, Australia, Dec 2010 (cat. no. 8731.0).

1 Australian Bureau of Statistics, September 2010, Livestock Products, Australia, cat. no. 7215.0, viewed 2 February 2011, <https://www.abs.gov.au/ausstats /abs@.nsf/mf/7215.0> <back

State Comparison

STATE COMPARISON

This section contains the following subsection :
Summary of statistical indicators

Summary of statistical indicators

SUMMARY OF STATISTICAL INDICATORS

This chapter summarises the change in key Victorian statistical indicators and compares them with the same statistical indicators for other states and Australia.

View underlying table as an Excel spreadsheet: State comparison from the Downloads Page.

Population

POPULATION

This section contains the following subsection :
Estimated resident population
Australian historical population statistics

Estimated resident population

ESTIMATED RESIDENT POPULATION

Victoria's estimated resident population (ERP) at the end of any given period is the estimated population at the beginning of the period plus the sum of three components: natural increase, net overseas migration and net interstate migration.

At the end of June quarter 2010, Victoria's ERP was 5,547,500 people, an increase of 18,100 (0.3%) since the end of March quarter 2010. Over the same period, Australia's ERP grew by 70,500 (0.3%).

Over the 12 months since the end of June quarter 2009, Victoria's ERP increased by 99,300 (1.8%).
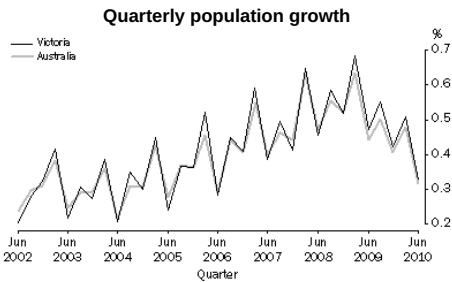
Natural increase (births minus deaths) accounted for an increase of 8,600 people in June quarter 2010. Net overseas migration contributed a similar increase (8,800) in the same quarter, and has consistently been the largest component of population growth since December quarter 2006.

Net interstate migration has historically meant loss of population from Victoria to other states and territories. However, following eleven consecutive quarters of

loss, net interstate migration made a positive contribution to the state's population during the latest six quarters. The largest contribution of net interstate migration (900 people) was in March quarter 2010.

View underlying table as an Excel spreadsheet: Download Estimated resident population and Components of population change, Victoria from the Downloads Page.

Components of population growth, Victoria
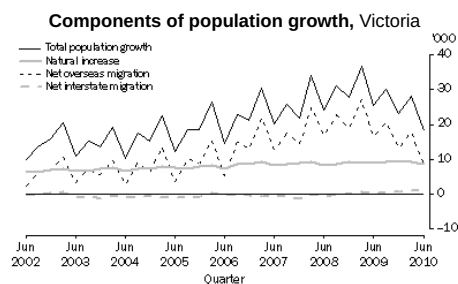
Summary commmentary on Victorian population growth and distribution at state and sub-state levels can be found in Regional Population Growth, Australia (cat. no. 3218.0).

The most current estimates of the resident population of Victoria by single year of age and sex at 30 June 2010 can be found in Australian Demographic Statistics (cat. no. 3101.0). Further details on Victorian population by age and sex for 30 June 2009 by various Geographic classifications are available in Population by Age and Sex, Regions of Australia (cat. no. 3235.0).

Accessible via the Summary page of Population by Age and Sex, Australian States and Territories, Jun 2009 (cat. no. 3201.0) are the ABS animated population pyramids, which show the change in the age and sex distribution of the population of Australia and each state and territory over time and projected into the future.

More detailed animated populations pyramids are available for Victoria in Population Pyramids for Victorian Local Government Areas. These pyramids show the change each year from 1986 to 2009 in the age and sex distribution of the population of each Victorian local government area (LGA) in five year age groups.

The feature article Measuring Victoria's Population explains how the ABS derives ERP, and the role of the Victorian regional office in producing these estimates (published in the March quarter 2009 issue of State and Regional Indicators, Victoria).

Australian historical population statistics

Contents >> Population >> Australian historical population statistics

AUSTRALIAN HISTORICAL POPULATION STATISTICS

A wide range of demographic data is available in spreadsheet format (Microsoft Excel) in **Australian Historical Population Statistics** (cat. no. 3105.0.65.001). The product is updated periodically, and more up-to-date information may be available from the source products stated at the bottom of each spreadsheet.

The following topics are covered by the spreadsheets in 3105.0.65.001:

- Population size and growth
- Indigenous population
- Population distribution
- Population age-sex structure
- Births
- Deaths
- Life tables
- Migration
- Country of birth
- Overseas arrivals and departures
- Marriages
- Divorces
- Marital status

Work and Income

Contents >> Work and Income

WORK AND INCOME

This section contains the following subsection :
    Revisions to population benchmarks

Revisions to population benchmarks

Contents >> Work and Income >> Revisions to population benchmarks

REVISIONS TO POPULATION BENCHMARKS

Labour force estimates in this issue have been compiled using population benchmarks incorporating revisions made to net overseas migration estimates, published in the September 2008 and September 2009 issues of Australian Demographic Statistics (cat. no. 3101.0). The revised population benchmarks apply to the months of July 2006 to June 2010. For more information, refer to Labour Force, Australia (cat. no. 6202.0).

Labour Force Survey standard products and data item guide

Contents >> Work and Income >> Labour Force Survey standard products and data item guide

LABOUR FORCE SURVEY STANDARD PRODUCTS AND DATA ITEM GUIDE

In December 2009, the ABS released **Labour Force Survey Standard Products and Data Item Guide** (cat. no. 6103.0). This product itemises and cross references all data contained within the Labour Force Survey standard products (including geographic data items), with an explanation of each data item, including relevant formats, and product location.

The Labour Force Survey standard products are:

- **Labour Force, Australia** (cat. no. 6202.0)
- **Labour Force, Australia, Detailed - Electronic Delivery** (cat. no. 6291.0.55.001)
- **Labour Force, Australia, Detailed, Quarterly** (cat. no. 6291.0.55.003)
- **Labour Force, Australia: Labour Force Status and Other Characteristics of Families** (cat. no. 6224.0.55.001)

Statistical significance of movements and other comparisons

Contents >> Work and Income >> Statistical significance of movements and other comparisons

STATISTICAL SIGNIFICANCE OF MOVEMENTS AND OTHER COMPARISONS

As the estimates are based on a sample survey, published estimates and the movements derived from them are subject to sampling variability. This chapter includes commentary on movements in estimates between different time periods, as well as other comparisons between categories or geographic regions. Testing of statistical significance has not been undertaken, therefore some of the commentary may refer to movements or comparisons which are not statistically significant. Standard errors for estimates in the Labour Force Survey can be calculated by using the spreadsheet contained in **Labour Force Survey Standard Errors, Data Cube** (cat. no. 6298.0.55.001).

Civilian labour force by Region

Contents >> Work and Income >> Civilian labour force by Region

CIVILIAN LABOUR FORCE BY REGION

Based on trend estimates, total employment in Victoria rose by 89,900 persons (3.2%) between December 2009 and December 2010. The number of people employed full-time and part-time increased by 78,700 (4.1%) and 11,200 (1.3%) respectively, over the same period. In December 2010, males accounted for 65.6% of full-time employed persons and 55.1% of total employed persons, while females accounted for 68.6% of part-time employed persons.

Employed persons, Victoria**:** Trend

Source: Labour Force, Australia (cat. no. 6202.0).
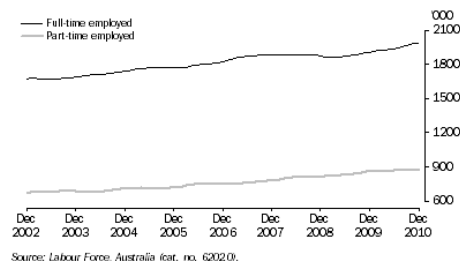
The trend estimate of the total number of unemployed persons in Victoria for December 2010 was 158,100 persons, an increase of 1,000 persons from December 2009. This resulted in an unemployment rate of 5.2%, a decrease of 0.1 percentage points from December 2009. The female unemployment rate (5.6%) was higher than the male unemployment rate (4.9%) in December 2010.

Unemployment rate, Victoria**:** Trend

Source: Labour Force, Australia (cat. no. 6202.0).
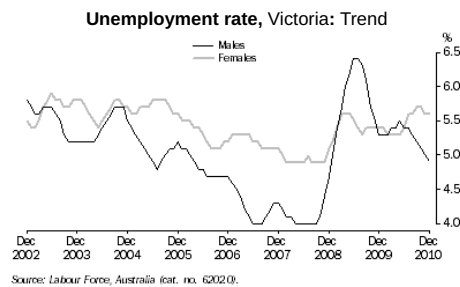
The trend estimate of the participation rate for Victoria in December 2010 was 66.0%, which was 0.6 percentage points higher than the rate recorded in December 2009. The female participation rate is historically lower than the male participation rate and in December 2010 the female and male participation rates were 58.5% and 73.7%, respectively. Between December 2009 and December 2010 the male participation rate increased by 1.3 percentage points while the female participation rate remained steady.

Participation rate, Victoria**:** Trend

Source: Labour Force, Australia (cat. no. 6202.0).

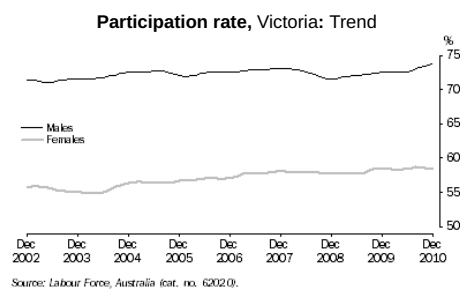View underlying data as an Excel spreadsheet: Download Table 05. Labour force status by Sex - Victoria - Trend, seasonally adjusted and original from the Downloads Page of Labour Force, Australia (cat. no. 6202.0).

The rest of the chapter analyses original series estimates unless otherwise stated.

In the Melbourne Major Statistical Region (MSR), there was an increase of 71,900 in employment and a decrease of 12,800 in unemployment, resulting in the labour force growing by 59,100 people (2.7%) between December 2009 and December 2010. The labour force also grew in the Balance of Victoria MSR, with an increase in both employment (19,500) and unemployment (2,700). In the Melbourne MSR, full-time and part-time employment increased by 3.9% and 2.5% respectively, while in the Balance of Victoria MSR, full-time employment increased by 5.6% and part-time employment decreased by 2.8%.

The labour force participation rate increased from 66.9% to 67.2% in the Melbourne MSR and from 63.8% to 64.2% in the Balance of Victoria MSR.

Between December 2009 and December 2010, the proportion of employed people who worked full-time increased from 70.2% to 70.5% in the Melbourne MSR, and from 66.1% to 67.9% in the Balance of Victoria MSR.

Change in employed persons, Labour Force Regions in Balance of Victoria **-** December 2009 to December 2010

Source: Labour Force, Australia, Detailed - Electronic Delivery (cat. no. 6291.0.55.001)
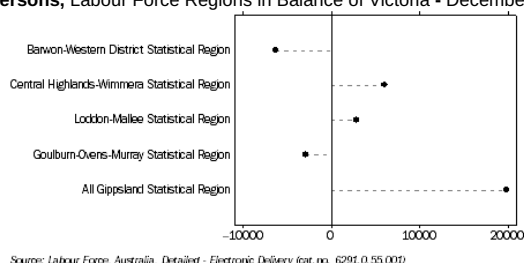
Within the Balance of Victoria MSR, the All Gippsland Statistical Region (SR) recorded the largest increase in employment (19,800), followed by the Central Highlands-Wimmera SR (6,000) while decreases in employment were recorded in the Barwon-Western District SR (6,300) and Goulburn-Ovens-Murray SR (2,900).

View underlying data as an Excel spreadsheet: Download Civilian labour force, By Statistical Region from the Downloads Page.

Employed persons by Industry

Contents >> Work and Income >> Employed persons by Industry

EMPLOYED PERSONS BY INDUSTRY

In November quarter 2010, the largest proportion of people employed in the Melbourne MSR were in Health Care and Social Assistance (11.4%) followed by Retail Trade (11.0%), and Manufacturing (10.5%). In the Balance of Victoria MSR, the largest proportion of employed people were in Retail Trade (12.9%) followed by Manufacturing (12.1%) and Health Care and Social Assistance (10.9%).

Employed persons(a), By Industry(b) and Major Statistical Region **-** November quarter 2010
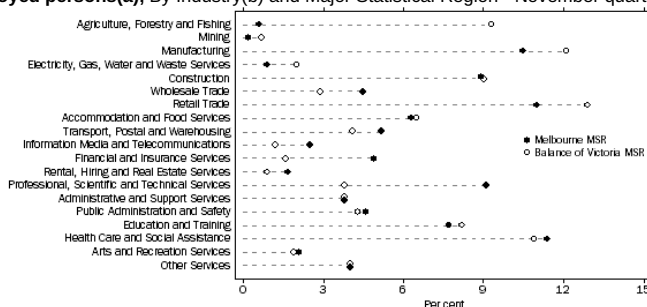
(a) Civilian population aged 15 years and over.
(b) Data provided on ANZSIC06 basis.

In Victoria, Construction (87.2%), Mining (83.5%), and Transport, Postal and Warehousing (81.0%) recorded the largest proportions of males employed. Industries with the largest proportions of females employed were Health Care and Social Assistance (79.1%) and Education and Training (70.8%).

Construction accounted for the largest proportion of full-time males employed in Victoria (92.8%), and Health Care and Social Assistance accounted for the largest proportion of full-time females employed (69.5%).

The industry with the largest proportion of male part-time workers was Transport, Postal and Warehousing (60.2%), while Health Care and Social Assistance employed the largest proportion of part-time females (90.1%).

View underlying table as an Excel spreadsheet: Download Employed persons, By Industry and Major Statistical Region - November quarter 2010 from the Downloads Page.

Employed persons by Occupation

Contents >> Work and Income >> Employed persons by Occupation

EMPLOYED PERSONS BY OCCUPATION

In November quarter 2010, in the Melbourne MSR, nearly a quarter of employed people were employed as Professionals (24.7%), with Clerical and Administrative Workers (15.8%), Technicians and Trades Workers (13.1%) and Managers (12.5%) being the next largest groups. In the Balance of Victoria MSR, 16.7% of employed persons were employed as Technicians and Trades Workers followed by Labourers (15.8%), Professionals (14.5%) and Managers (14.3%).

Full-time workers in Victoria worked mainly as Professionals (24.2%), Technicians and Trades Workers (17.6%) and Managers (16.2%), while part-time workers were mainly Sales Workers (19.0%), Community and Personal Service Workers (17.6%) and Professionals (17.4%).

Employed persons(a), By Occupation(b) and Major Statistical Region **-** November quarter 2010
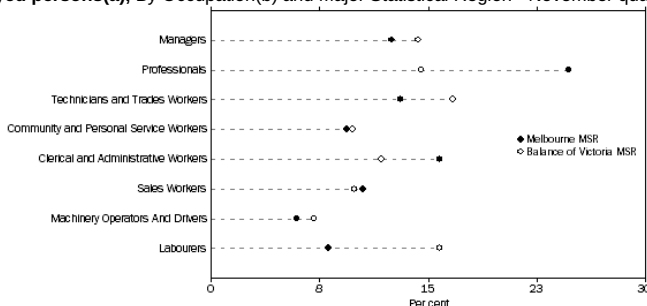
(a) Civilian population aged 15 years and over.
(b) Data provided on ANZSCO basis.

View underlying table as an Excel spreadsheet: Download Employed persons, By Occupation and Major Statistical Region - November quarter 2010 from the Downloads Page.
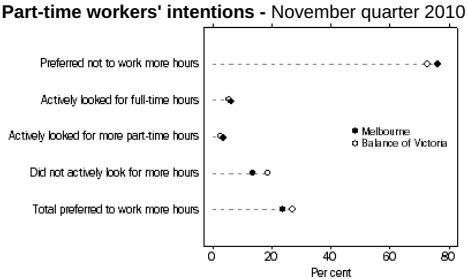
Part-time workers

PART-TIME WORKERS

In November quarter 2010, there were 643,200 part-time workers in the Melbourne MSR, an increase of 22,900 (3.7%) since November quarter 2009.

The majority of part-time workers (76.2%) in Melbourne MSR preferred not to work additional hours, and this was a more common preference among females (78.5%) than males (71.5%).

In the Balance of Victoria MSR, the total number of part-time workers in November quarter 2010 was 239,200, an increase of 10,200 (4.5%) since November quarter 2009. The majority of these part-time workers (72.8%) preferred not to work more hours.

Part-time workers' intentions - November quarter 2010

View underlying table as an Excel spreadsheet: Download Part time workers, By Preference for more hours, Sex and Major Statistical Region from the Downloads Page.

Duration of unemployment

DURATION OF UNEMPLOYMENT

Between December 2009 and December 2010, the number of people classified as short-term unemployed (less than 13 weeks) decreased by 2,600 people (4.0%) in the Melbourne MSR and by 1,700 people (8.2%) in the Balance of Victoria MSR.

Over the same period, the number of people classified as medium-term unemployed (13 to less than 52 weeks) decreased by 8,200 (25.2%) in the Melbourne MSR, but increased by 4,800 (51.1%) in the Balance of Victoria MSR.

The number of people classified as long-term unemployed (52 weeks or more) decreased by 2,000 (12.9%) in the Melbourne MSR and by 500 (5.2%) in the Balance of Victoria MSR.

Unemployed persons, By Duration of unemployment **-** Victoria
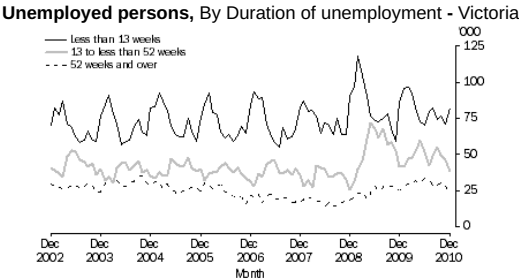
View underlying table as an Excel spreadsheet: Download Unemployed persons, By Duration of unemployment, Sex and Major Statistical Region from the Downloads Page.

Small area unemployment rate estimates

SMALL AREA UNEMPLOYMENT RATE ESTIMATES

The Australian Government Department of Education, Employment and Workplace Relations (DEEWR) produces unemployment rate estimates at Statistical Local Area (SLA) level, using information derived from the ABS Labour Force Survey (LFS), supplemented by small area data from the ABS Census of Population and Housing and Centrelink.

DEEWR have made the transition to the geographic classification and population benchmarks now used in the LFS (based on the 2006 Census of Population and Housing) from those used previously (based on the 2001 Census). Unemployment estimates for SLAs and aggregates thereof for periods prior to March quarter 2008 are based on 2001 Census-based population benchmarks. For most areas, there has been no impact from the change in geographic classification. Further

details can be found in paragraphs 2-5 of the Explanatory Notes for further information.

The series analysed in the commentary below and presented in the underlying table is the DEEWR 'smoothed series'. The quarterly estimates have been smoothed using a four-quarter average ending in the reference quarter. Therefore, the reference period refers to an average over the year ended the last month of the reference quarter (for example, June quarter 2009 refers to the average of the four quarters from September quarter 2008 to June quarter 2009, or the average over the year ended June 2009).

In September quarter 2010, the highest unemployment rates were recorded in the LGAs of Central Goldfields (10.9%), Greater Dandenong (10.2%), and Hume (10.0%), while the lowest unemployment rates were recorded in Nillumbik (1.8%), Stonnington (2.6%) and Bayside (2.7%).

Unemployment Rate Estimates, Victoria, September 2010

Local Government Areas

Labour Force Region

Local Government Area

Unemployment rate estimates (%)

7 or more
6 - 7
5 - 6
4 - 5
Less than 4

0   100

Kilometres

Based on Local Government Area Boundaries and Labour Force Regions 2006
Source: Australian Government Department of Education, Employment and Workplace Relations (DEEWR)

Legend:
- Labour Force Region
- Local Government Area

Unemployment rate estimates (%)
- 7 or more
- 6 to 7
- 5 to 6
- 4 to 5
- Less than 4

(a) The majority of the Yarra Ranges (S) LGA is in the Melbourne Statistical Division (SD). However, the Yarra Ranges (S) — Pt B SLA is in the Gippsland SD. The whole of Yarra Ranges (S) LGA have been included.

Based on Local Government Area Boundaries and Labour Force Regions 2006
Source: Australian Government Department of Education, Employment and Workplace Relations (DEEWR)

View underlying table as an Excel spreadsheet: Download Estimates of unemployment rate, By Local Government Area: Smoothed series from the Downloads Page.

Average weekly earnings

Contents >> Work and Income >> Average weekly earnings

AVERAGE WEEKLY EARNINGS

A sample redesign based on **Australian and New Zealand Standard Industrial Classification, 2006** (ANZSIC06) (cat. no. 1292.0) was introduced into the Average Weekly Earnings (AWE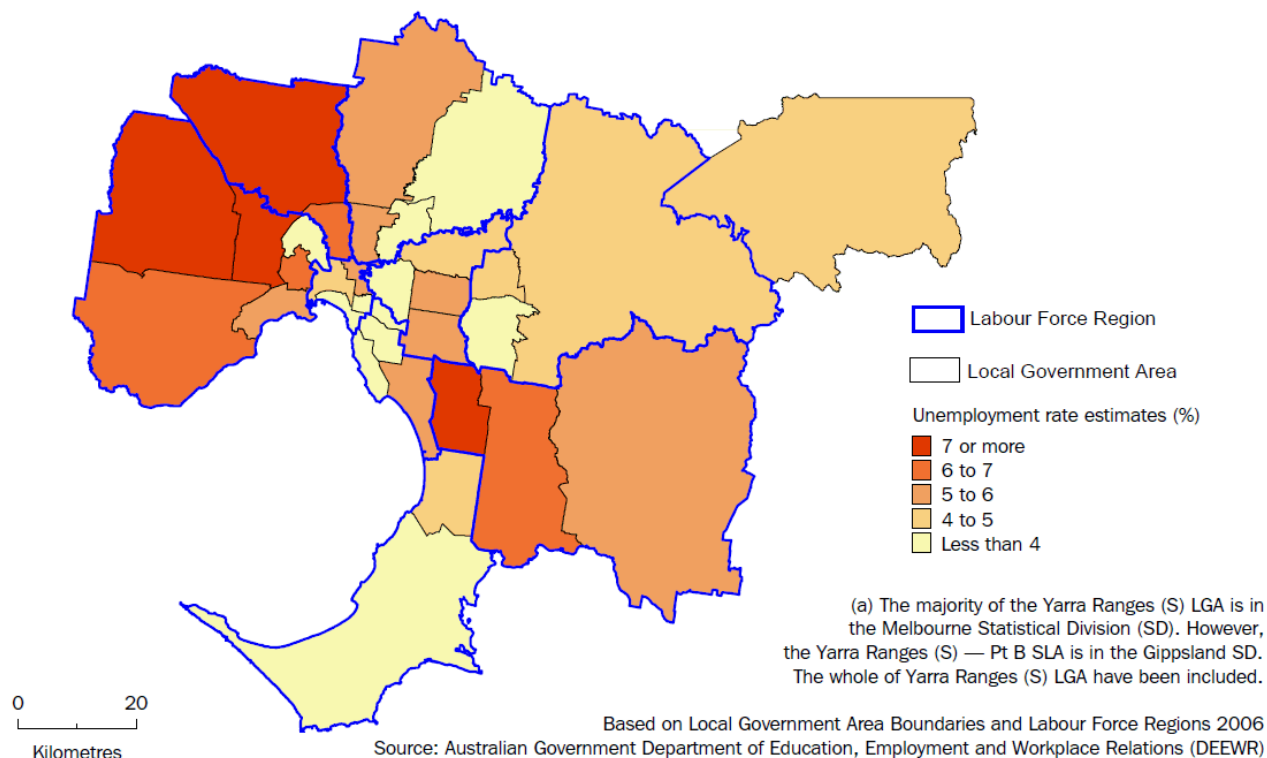) survey in August 2009, along with some improvements to the survey frame. These changes have resulted in a shift in the level of the series. The difference in the level of the two series (ANZSIC06 and ANZSIC93) has been measured and backcast into the historical series to make a time series of estimates on an ANZSIC06 basis. Because of the extent of changes in level estimates, quarterly and annual percentage change movements for the new ANZSIC06 series are not identical to those under the old ANZSIC93 series. Differences at the state, sector and Australia levels are generally insignificant and within current released standard errors for each series.

Movements in average weekly earnings can be affected by both changes in the level of earnings per employee and changes in the composition of the labour force. For example, changes in the proportions of full-time, part-time, casual and junior employees and variations in the distribution of occupations can affect movements in earnings series. Refer to Average Weekly Earnings, Australia (cat. no. 6302.0).

In August quarter 2010, the trend estimate of average weekly full-time adult ordinary time earnings in Victoria was $1,230.40, an increase of 4.7% from August quarter 2009. Over the same period, trend full-time adult ordinary time earnings increased by 4.5% for males and by 4.0% for females.

Average weekly full-time adult ordinary time earnings, By Sex - Victoria**:** Trend
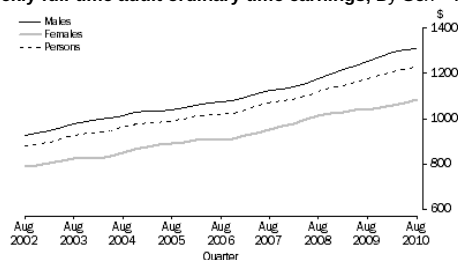
View underlying table as an Excel spreadsheet: Download Average weekly earnings of employees, By Sex - Victoria: All series from the Downloads Page.

State Final Demand

Contents >> State Final Demand

 STATE FINAL DEMAND

This section contains the following subsection :
    State final demand

State final demand

Contents >> State Final Demand >> State final demand

STATE FINAL DEMAND

The incorporation of more up-to-date source data and changes to seasonal adjustment factors have resulted in revisions to the previously published estimates. For details see Australian National Accounts: National Income, Expenditure and Product, Jun 2010 (cat. no. 5206.0).

State final demand is the estimate obtained by summing government final consumption expenditure, household final consumption expenditure, private gross fixed capital formation and the gross fixed capital formation of public corporations and general government.

In September quarter 2010, the trend estimate for Victorian final demand, in volume terms, was $77,638 million, an increase of 0.6% from June quarter 2010. This was below the trend growth for Australian domestic final demand (0.7%) and New South Wales final demand (0.8%) over the same period.

Household final consumption expenditure is the largest component of state final demand, and accounted for 56.5% of the trend volume estimate in September quarter 2010. The trend volume estimate of household final consumption expenditure increased by 1.3% from the previous quarter. The other main contributors to trend state final demand in September quarter 2010 were private gross fixed capital formation (21.7%) and government final consumption expenditure (16.2%).

View underlying data as an Excel spreadsheet: Download State final demand, Victoria, Chain volume measures: Seasonally adjusted and trend and State final demand, Victoria, Original from the Downloads Page.

State final demand, Chain volume measures**:** Trend **-** Change from previous quarter
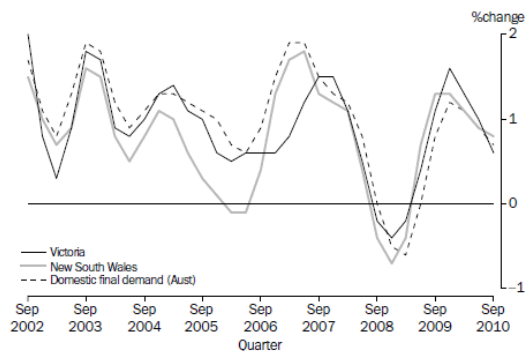
Price Indexes

Contents >> Price Indexes

 PRICE INDEXES

This section contains the following subsection :
    Consumer Price Indexes
    House price indexes

Consumer Price Indexes

CONSUMER PRICE INDEXES

Between September quarter 2010 and December quarter 2010, the All groups Consumer Price Index (CPI) for Melbourne increased by 0.6%. The groups that recorded the largest increases were: Food (2.5%), Alcohol and tobacco (1.0%), Housing (0.7%) and Transportation (0.7%). The groups that recorded the largest decreases were Health (-1.0%) and Household contents and services (-0.5%).

Change in Consumer Price Index, By Group, Melbourne **-** September quarter 2010 to December quarter 2010

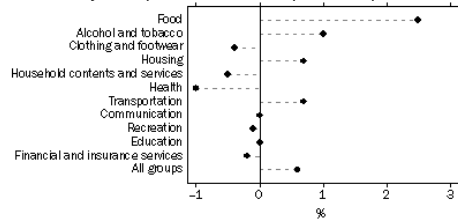Between December quarter 2009 and December quarter 2010, the All groups CPI for Melbourne rose by 3.1%. The All groups CPI weighted average of the eight capital cities rose by 2.7% over the same period. The biggest annual increases for Melbourne were recorded in Alcohol and tobacco (12.3%), Education (8.3%), Housing (6.2%), Health (5.4%) and Financial and insurance services (2.9%). The groups that recorded the largest decreases for the year were Clothing and footwear (-5.1%) and Recreation (-2.7%).

View underlying table as an Excel spreadsheet: Download Consumer price index, By Group, Melbourne and Weighted average of eight capital cities from the Downloads Page.

Previous Page   Next Page

House price indexes

HOUSE PRICE INDEXES

The price index for established houses covers transactions in detached residential dwellings on their own block of land regardless of age (i.e. includes new houses sold as a house/land package as well as second-hand houses). Price changes therefore relate to changes in the total price of dwellings and land.

A detailed description of the concepts, sources and methods behind the established house price index can be found in **House Price Indexes: Concepts, Sources and Methods, Australia** (cat. no. 6464.0). This publication was re-released in December 2009, and covers the changes made in the stratification method and weights as a result of a review of the established house price index in 2007 and 2008, as well as more information on how the index is calculated and on price index concepts in general.

Project homes are dwellings available for construction on an existing block of land. Price changes relate only to the cost of constructing the dwelling (excluding land).

In December quarter 2010, the price index of project homes in Melbourne increased by 0.7% from the previous quarter. Based on preliminary estimates, the price index of established houses increased by 1.3% over the same period. Preliminary estimates of the weighted average of the eight capital cities showed an increase of 0.7% in established house prices and an increase of 0.8% in project home prices from the previous quarter.

From December quarter 2009 to December quarter 2010, established house prices in Melbourne increased by 10.8% based on preliminary estimates, and project home prices increased by 2.8%.

House price indexes, Melbourne

(a) Base of each index: four quarter average 2003-04 = 100.0.
(b) Estimates for the two most recent quarters of the established house price index are preliminary.
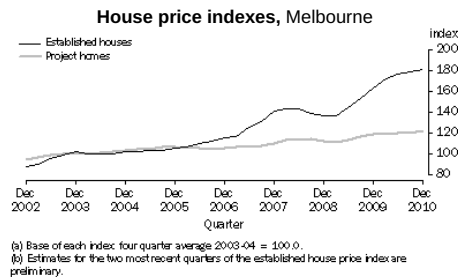
View underlying table as an Excel spreadsheet: Download House price indexes, Melbourne and Weighted average of eight capital cities from the Downloads Page.

Previous Page   Next Page

Construction

CONSTRUCTION

This section contains the following subsection :
Building approvals
Engineering construction activity

Building approvals

BUILDING APPROVALS

In December quarter 2010, there were 15,546 new dwelling units approved in Victoria, of which 79.5% were in the Melbourne MSR. There were 2,076 (11.8%) fewer dwelling unit approvals in Victoria than in the previous quarter, but 1,315 (9.2%) more than in December quarter 2009. The number of dwelling units approved in the Melbourne MSR decreased by 12.5% compared with the previous quarter, but increased by 18.8% compared with December quarter 2009. In the Balance of Victoria MSR there was a decrease of 317 (9.1%) dwelling unit approvals from the previous quarter and a decrease of 640 (16.8%) from December quarter 2009.

More than one third (36.0%) of dwelling unit approvals in the Melbourne MSR over the December quarter 2010 were in three LGAs - Melbourne (C) (2,167), Wyndham (C) (1,331) and Whittlesea (C) (959). In the Balance of Victoria MSR, the LGAs with the highest number of dwelling units approved were Greater Geelong (C) (491), Ballarat (C) (266) and Greater Bendigo (C) (254).

Dwelling unit approvals, By Major Statistical Region
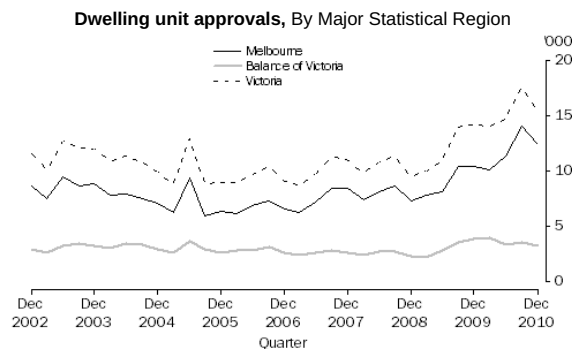
At current prices, the total value of building approvals in Victoria in December quarter 2010 was $6,494.5 million, an increase of $60.1 million (0.9%) since September quarter 2010, and an increase of $174.8 million (2.8%) compared with December quarter 2009.

Value of all building approvals, Current prices, By Major Statistical Region

View underlying table as an Excel spreadsheet: Download Building approvals, By Local Government Area from the Downloads Page.

Engineering construction activity

ENGINEERING CONSTRUCTION ACTIVITY

For Victoria, the total value (at current prices) of engineering construction activity, work done, during September quarter 2010 was $2.6 billion, a decrease of 2.9% from June quarter 2010 and an increase of 13.1% over September quarter 2009. Work done for water storage and supply, sewerage and drainage comprised 27.2% of the total value, while roads, highways and subdivisions comprised 22.0% and electricity generation, transmission etc. and pipelines 18.8%.

Value of engineering construction work done, Victoria
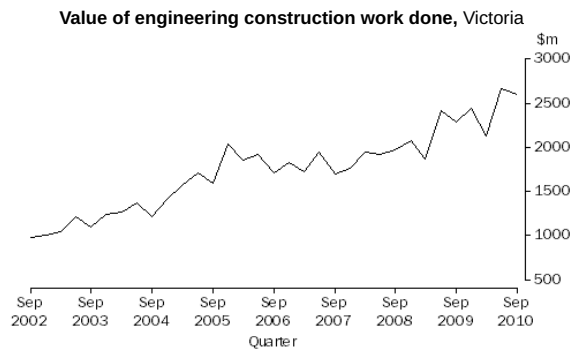
View underlying table as an Excel spreadsheet: Download Engineering construction activity, By Type - Victoria: Original from the Downloads Page.

Tourism

Contents >> Tourism

TOURISM

This section contains the following subsection :
    Tourist accommodation

Tourist accommodation

Contents >> Tourism >> Tourist accommodation

TOURIST ACCOMMODATION

In September quarter 2010, total accommodation takings for hotels, motels and serviced apartments in Victoria with 15 or more rooms was $380.0 million, an increase of 12.3% from September quarter 2009. The Melbourne Tourism Region accounted for the majority of Victoria's accommodation takings (77.0%).

Details of SLAs, the composition of tourism regions and maps of tourism regions are provided in the ABS publication Tourism Region Maps and Correspondence File (cat. no. 9503.0.55.001).

The largest percentage growth in accommodation takings between September quarter 2009 and September quarter 2010 was recorded in the Tourism Region of Central Highlands (21.9%) followed by Central Murray (15.9%) and Melbourne (15.2%). Six Tourism Regions experienced a decrease over the same period, with Murray East (45.3%) and Ballarat (7.6%) Tourism Regions experiencing the largest decreases.

Change in takings from accommodation(a), By Tourism Region(b) **-** September quarter 2009 to September 2010
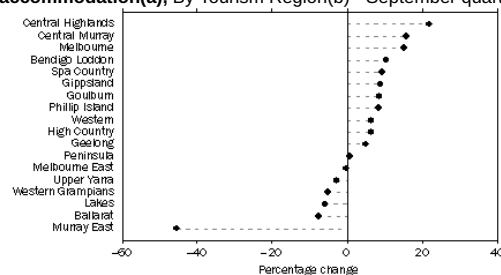
(a) Hotels, motels and serviced apartments with 15 or more rooms.
(b) 'Change in Takings' was not available for the following Tourism Regions: Wimmera, Macedon and Mallee.

View underlying data as an Excel spreadsheet: Download Tourist accommodation, By Tourism Region - September quarter 2010 from the Downloads Page.

Agriculture

Contents >> Agriculture

AGRICULTURE

This section contains the following subsection :
Livestock slaughtering and meat production
Other Agricultural Production

Livestock slaughtering and meat production

Contents >> Agriculture >> Livestock slaughtering and meat production

LIVESTOCK SLAUGHTERING AND MEAT PRODUCTION

The trend estimate for the number of livestock slaughtered decreased by 59,600 (5.3%) between November 2009 and November 2010. Slaughtering of Sheep and Calves decreased by 29.7% and 23.0% respectively, while slaughtering of Pigs and Cattle increased by 28.2% and 3.7% respectively over the period.

Total livestock slaughtering, Victoria
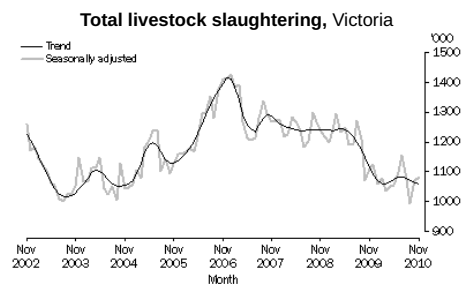
Between November 2009 and November 2010, the trend estimate for total meat production for Victoria increased by 2219.9 tonnes (4.2%). The production of Veal and Mutton decreased by 25.8% and 25.2% respectively, while increases were recorded for Pig meat (33.2%) and Beef (7.1%) over the same period.

Total meat produced, Victoria

View underlying table as an Excel spreadsheet: Download Livestock slaughtering and meat production, Victoria: All series from the Download Page.

Other Agricultural Production

Contents >> Agriculture >> Other Agricultural Production

OTHER AGRICULTURAL PRODUCTION

The data items: wool receivals, live sheep exports, chicken slaughtered and chicken meat are sourced from the ABS and the data items: milk and milk products are from non-ABS sources.

View underlying data as an Excel spreadsheet: Download Other agricultural production, Victoria from the Downloads Page.

Trade

Contents >> Trade

TRADE

This section contains the following subsection :

Confidentiality of merchandise trade statistics

Contents >> Trade >> Confidentiality of merchandise trade statistics

CONFIDENTIALITY OF MERCHANDISE TRADE STATISTICS

The release of statistics for certain merchandise trade commodities is restricted in order to prevent the identification of the activities of an individual business, where it is requested by the business. These restrictions do not affect the total value of exports and imports for Australia, but they can affect statistics at disaggregated levels, including by state.

Prior to September 2008, import commodities with confidentiality restrictions 'No commodity details' or 'No value details' contributed to the relevant state and country totals, so that these totals showed the accurate level of trade. To ensure the confidentiality of data, this treatment changed in September 2008. Import commodities with these confidentiality restrictions are now excluded from all state-level data. Therefore, data on imports for Victoria may understate the actual amount of trade in Victoria, including the amount of trade with the state's major trading partners.

International merchandise trade - Export data commodity prices adjustment

Contents >> Trade >> International merchandise trade - Export data commodity prices adjustment

INTERNATIONAL MERCHANDISE TRADE - EXPORT DATA COMMODITY PRICES ADJUSTMENT

International merchandise trade exports data are based on information provided by exporters to the Australian Customs and Border Protection Service (Customs and Border Protection). At the time of initial reporting to Customs and Border Protection the final prices for some commodities may not be known. New contract prices that have been recently negotiated, or are still being negotiated for commodities like iron ore and coal may not be fully reflected in the Customs and Border Protection source data. Final prices are updated progressively in recorded trade data as exporters revise the information provided to Customs and Border Protection.

It is not yet known how the recent move from annual to quarterly contracts for some exporters will impact on the reporting of information. For more information please refer to International Trade in Goods and Services, Australia, Jun 2010 (cat. no. 5368.0).

Balance of merchandise trade

Contents >> Trade >> Balance of merchandise trade

BALANCE OF MERCHANDISE TRADE

Statistics are collected for imports and exports. In this chapter, imports are presented in terms of Customs Value, while exports are presented in terms of Free on Board Value. In December 2010, the balance of international merchandise trade (i.e. the value of exports less the value of imports) for Victoria was a deficit of $3,000m. The value of the state's merchandise exports was $1,754m, while merchandise imports totalled $4,755m. Compared with December 2009, Victoria's trade deficit in December 2010 was $168m (5.9%) higher, with a rise in the value of exports (up $127m, or 7.8%) being offset by a $296m rise in the value of imports (6.6%). Victoria recorded an average monthly trade deficit of $3,055m for the 12 months ending December 2010.

At the national level, the value of imports was 2.9% higher in December 2010 compared with December 2009, while the value of exports (including re-exports) was 28.4% higher over the same period.

Balance of international merchandise trade(a)

(a) Exports minus Imports
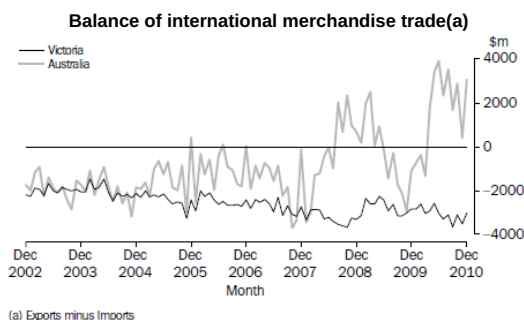
In 2009-10, Victoria's trade deficit was $34,691m, a decrease of $1,392m (3.9%) over the previous financial year. The state's exports and imports decreased by $1,948m (9.6%) and $3,340m (5.9%) respectively.

More detailed animated trade pyramids for Victoria are available in https://www.abs.gov.au/websitedbs/D3310114.nsf/home/Victorian+Trade+Pyramid. These pyramids illustrate the change over time (from 1988–89 to 2008–09) in Victoria's exports and imports among the state's top ten (in dollar terms) trading partners by broadly grouped commodities.

View underlying table as an Excel spreadsheet: Download Balance of international merchandise trade from the Downloads Page.

Trade by Commodity

Contents >> Trade >> Trade by Commodity

TRADE BY COMMODITY

More than a quarter (28.5%) of Victoria's merchandise exports in 2009-10 were Food and live animals, followed by Machinery and transport equipment (19.6%). Compared with 2008-09, exports of Crude materials, inedible, except fuels rose (by $311m) while decreases were observed for all other commodity groups. The commodities with the largest decreases in exports were Food and live animals ($651m) and Manufactured goods classified chiefly by material ($580m).

Food and live animals accounted for 30.9% of Victoria's exports in December quarter 2010, while Machinery and transport equipment contributed 18.8% of the total.

Imports of Machinery and transport equipment comprised 39.8% of total Victorian imports in 2009-10, more than twice the size of the next largest category (Miscellaneous manufactured articles, 16.6%). Between 2008-09 and 2009-10, imports of all commodities decreased, with the largest decreases in Miscellaneous manufactured articles ($1,096m) and Machinery and transport equipment ($549m).

View underlying table as an Excel spreadsheet: Download International merchandise trade, By Commodity - Victoria from the Downloads Page.

Major trading partners

Contents >> Trade >> Major trading partners

MAJOR TRADING PARTNERS

Based on the value of trade, Victoria's biggest trading partner in 2009-10 was China, with combined exports and imports of $12,856m. The next biggest trading partners were the United States of America, Japan, New Zealand and Germany. Victoria's largest trade deficits in 2009-10 were recorded with most of its biggest trading partners - China (-$8,097m), the United States of America (-$4,510m), Japan (-$3,548m) and Germany (-$3,360m). Over the same period, trade surpluses were recorded with four of the state's 30 major trading partners, Saudi Arabia ($1,029m), United Arab Emirates ($395m), Hong Kong ($163m) and Philippines ($6m).

The top five destinations of Victoria's exports in December quarter 2010 were China, New Zealand, Japan, the United States of America and Saudi Arabia. Combined, 45.9% of the state's exports in the quarter went to these countries. Over one-fifth (21.8%) of imports to Victoria came from China, with the United States of America (11.1%) and Japan (9.1%) being the next two largest sources.

View underlying table as an Excel spreadsheet: Download International merchandise trade, By Major trading partner - Victoria from the Downloads Page.

Environment

Contents >> Environment

ENVIRONMENT

This section contains the following subsection :
    Air quality
    Water resources

Air quality

Contents >> Environment >> Air quality

AIR QUALITY

The Air Quality Index compiled by the Victorian Environment Protection Authority describes the concentration of various pollutants relative to environmental standards. The lower the index is, the better the quality of our air. The index is available for four areas in the Port Phillip Region (East, West, City and Geelong) and the Latrobe Valley.

The Air Quality Index is made up of separate indices for each pollutant. Two of these are presented here - Visibility Reduction, and Ozone. The Visibility Reduction Pollutant Index gives a measure of the amount of fine particles in the air. These particles scatter light and reduce how far we can see. The Ozone Pollutant index tracks the amount of ozone associated with summer smog, which is harmful to human health.

In the data tables, air quality associated with these pollutants is classified as Very Good, Good, Fair, Poor or Very Poor. Incidents of Poor visibility are generally higher during the cooler months of autumn and winter (from March to August), whereas ozone levels are generally higher during the summer (from December to February). However, during periods of smoke from bushfires or planned burns, there may be a lot of particles in the air, causing the Visibility Reduction index to reach the Poor or Very Poor category during summer or autumn.

Air pollution varies a great deal from hour to hour, day to day and season to season, according to weather and pollution sources. Daily forecasts for the next day's air quality in Melbourne are available in major newspapers and on the EPA website.

More information on the air quality index can be found by visiting the EPA website: http://www.epa.vic.gov.au/air/bulletins/aqindex.asp

View underlying table as an Excel spreadsheet: Download Air quality, By Region from the Downloads Page.

Water resources

WATER RESOURCES

At the end of December 2010, Victoria's water storages were at 72.2% of their capacity at full service level of 14,020 GL. This was 3.0 percentage points higher than the level in November 2010, and 41.9 percentage points higher than in December 2009.

Melbourne's water storage level at the end of December 2010 was 53.0% of capacity. This was 1.7 percentage points higher than in November 2010 and 20.4 percentage points higher than in December 2009. Rural water storages held 75.4% of their capacity at the end of December 2010, 3.6 percentage points higher than in November 2010, and 44.1 percentage points higher than the level in December 2009.

Between December 2009 and December 2010, the volume of water held in rural water storages increased by 141.2%. Lake Eildon in the Goulburn basin captured 36.2% of this increase, with a further 37.8% of the increase being in Murray basin storages. Just under three-quarters (73.9%) of the storage capacity at full service level of Victoria's rural water storages (9,396 GL) is represented by Lake Eildon (3,390 GL) and the state's share of Murray basin storages (3,557 GL). From December 2009 to December 2010, the volume of water in Lake Eildon increased from 44.2% of capacity to 75.1%.

The total capacity of the state's storages reduced by 365 GL in April 2009 following the decommissioning of Lake Mokoan, while 38 GL was added to full capacity in June 2009 when the Tarago Reservoir was added to the Melbourne supply system. A summary of changes to total storage capacity since December 2004 can be found in paragraph 14 of the Explanatory Notes.

Water storage volumes, Per cent of capacity

(a) Series breaks have been introduced in months where the capacity at full service level has changed. For further details, see paragraph 19 of the Explanatory Notes.
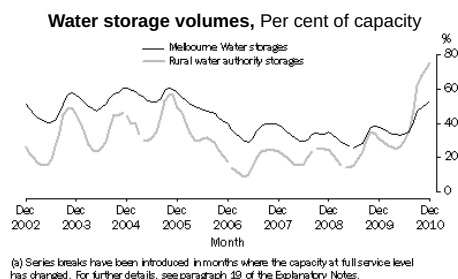
View underlying table as an Excel spreadsheet: Download Water storage levels, By River Basin from the Downloads Page.

Underemployment: A Victorian Perspective (Feature Article)

FEATURE ARTICLE: UNDEREMPLOYMENT: A VICTORIAN PERSPECTIVE

Defining Underemployment
Underemployment 1978 to 2010
Victorian Underemployed Workers in 2009
Seeking Work with More Hours
Experiences of Females and Males
Underemployment Across Age Groups
Conclusion
END NOTES
REFERENCES

Global financial markets experienced a period of distress from 2007 to 2009, which is commonly referred to as the global financial crisis (Australian Bureau of Statistics 2010a). Arising from the global financial crisis, Australia experienced a period of economic downturn from 2008 to 2009, which in turn had an effect on the labour market (Australian Bureau of Statistics and Reserve Bank of Australia 2010). This was the fourth period of economic downturn in Australia in the last 30 years.

Internationally, Australia fared comparatively well during the global financial crisis with economic growth slowing rather than declining (as in many other countries)

and unemployment rates amongst the lowest in the Organisation for Economic Cooperation and Development (OECD) (ABS and RBA 2010; Organisation for Economic Cooperation and Development 2010).

Traditionally in Australia, economic downturn has resulted in a significant increase in unemployment, but during the two most recent downturns (2000 to 2001 and 2008 to 2009) the rise in unemployment was less severe (ABS and RBA 2010; ABS 2010a). While unemployment did not rise as it had previously, the impact of economic downturn on the overall labour market was no less severe.

Changes to labour market composition, such as increases in part-time employment and female participation in the labour force, have transformed the effects of economic downturn on the Australian labour market (ABS 2010a). Therefore, to fully understand the impact of financial distress on Australian workers, the analytical scope must be widened to consider other aspects of the labour market, such as underemployment. Exploring underemployment during times of economic downturn gives greater insight into the response from employers in the face of economic distress as well as a better understanding of those sections of the labour market that are being underutilised.

Underemployment is becoming an increasingly important issue in the Australian labour market. Even prior to the global financial crisis Australia had one of the highest rates of underemployment in the OECD (OECD 2010). During the economic downturn the underemployment rate increased significantly, with a higher percentage point increase than that of the unemployment rate (in contrast to earlier economic downturns).

Using published data from the Labour Force Survey collected monthly since February 1978 (ABS catalogue number 6202.0) and customised data from the supplementary survey Underemployed Workers, collected in September 2009 (ABS catalogue number 6265.0), this article explores the experiences of Victorian underemployed workers. It examines underemployment broadly over the past 32 years, as well as in more depth for 2009 as this was the peak of the Australian economic downturn.

Defining Underemployment

Underemployment is generally understood as excess labour supply associated with employed persons, referring to persons working less hours than they would prefer. The ABS defines underemployment as persons employed part-time who would like to work more hours and are available to start doing so and persons who are employed full-time but in the reference week worked less than 35 hours due to economic reasons (such as being stood down or insufficient work being available)[1]. The number of persons underemployed is therefore a headcount measure. Figure 1 shows the conceptual framework for underemployment, with person estimates for Victoria.

Figure 1. Underemployment conceptual framework, Victoria, Sep 2009
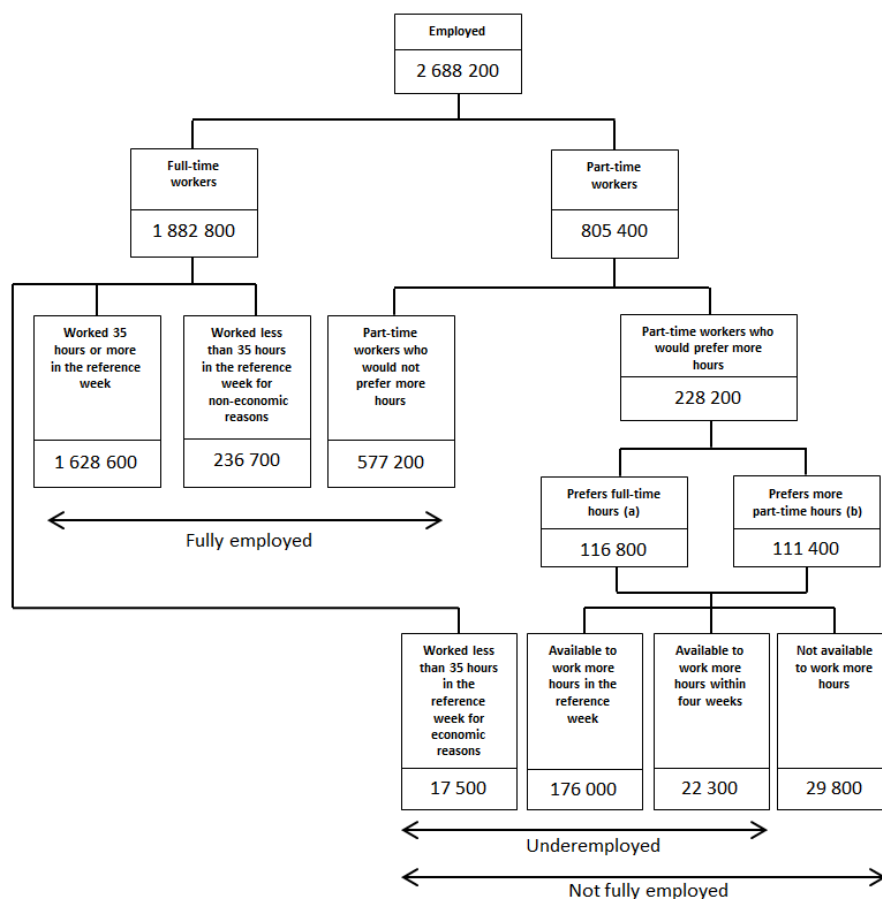
(a)   Total number of hours preferred to work each week are 35 hours or more.
(b)   Total number of hours preferred to work each week are 1 to 34 hours.

Source: *Underemployed Workers, Australia, Sep 2009 (cat. no. 6265.0),* customised data.

Being underemployed differs from not being fully employed as underemployed workers must be available to begin work with more hours within four weeks from the reference period (the time of the survey). However, to be defined as underemployed an employed person does not need to be actively looking for work with more hours. Full-time employed people are not asked whether they would prefer to work more hours. The only full-time people who are included in underemployment measures are those persons employed full-time who worked less than 35 hours in the reference week due to economic reasons. As a result, the majority of underemployed workers are employed part-time.

Underemployment results in people not being able to engage in work to their full potential and represents loss in financial and personal benefits (ABS 2010b). While the negative effects associated with underemployment have been found to be less severe than those associated with unemployment, underemployment can also cause upset and reduce life satisfaction (Wilkins 2007). Most people who would prefer to work more hours want to do so for the reason of gaining more income (ABS 2009).

Underemployment 1978 to 2010

While unemployment tends to decrease as the economy recovers, in previous downturns underemployment decreased more slowly, and did not return to pre-economic downturn levels as rapidly as unemployment (Campbell 2008). From Labour Force Survey data, the underemployment rate during the recent downturn rose more percentage points than the unemployment rate for Australia. The underemployment rate also decreased more than the unemployment rate in the months following the downturn.

Figure 2 compares the underemployment rate in Australia and in Victoria. Over the past 32 years Victorian underemployment has followed a similar trend to Australia. From 1978 to 1990, underemployment in Victoria remained at or below 3.5%. In May 1990 underemployment began to increase above 3.5% and it was at this time Australia experienced a recession[2] which lasted until 1991. Underemployment reached a peak of 7.5% in August 1992 and had not descended below 6.3% up to November 2010. More recently, underemployment reached 8.0% in August 2009, but since decreased to 6.8% in November 2010. Compared to Australia, Victoria had higher underemployment rates both before and after the most recent economic downturn. Victoria reached the same peak as that of Australia, however, as Victoria's underemployment rate was already higher than Australia's, the Victorian underemployment rate did not increase by as many percentage points as the Australian rate.

2 UNDEREMPLOYMENT RATE, Australia and Victoria: **Trend**

Source: Labour Force, Australia (cat. no. 6202.0)–Tables 21 and 22

As shown in Figure 3, the trend for Victorian unemployment and underemployment rates is different. In early 2000 the underemployment rate became higher than the unemployment rate. From February 1978 to May 2000, the unemployment rate was higher than the underemployment rate. Sustained economic growth following the recession during the early 1990s resulted in a decreasing unemployment rate (ABS 2010a). Increasing rates of part-time employment contributed to the underemployment rate remaining steady (ABS 2010a). As seen in Figure 3, these factors contributed to relatively higher underemployment rates since 2000.

During the recent economic downturn, Victorian unemployment rose similarly to underemployment, then underemployment decreased more than unemployment. From May 2008 to August 2009 the unemployment rate for Victoria rose 1.5 percentage points to 5.9%. For the same period the underemployment rate for Victoria rose 1.4 percentage points to 8.0%. Since August 2009 in Victoria the unemployment rate has decreased by 0.4 percentage points to 5.5% and the underemployment rate has decreased by 1.2 percentage points to 6.8% by November 2010 (ABS 2010b).

3 UNEMPLOYMENT AND UNDEREMPLOYMENT RATES, Victoria: **Trend**

Source: Labour Force, Australia (cat. no. 6202.0)–Table 22

The rise in underemployment during the downturn has been attributed to employers preferring to reduce employee hours rather than reduce the number of employees, as skill shortages prior to 2007 compelled organisations to retain staff in expectation of high recruitment costs following a short downturn (OECD 2010).

In contrast to the underemployment rate, an alternative way of measuring underemployment is to look at an hours based measure (volume underemployment rate). The volume underemployment rate measures the additional hours of labour preferred by underemployed workers, as a percentage of the potential hours in the labour force. Potential hours in the labour force refers to the sum of hours sought by unemployed people, additional hours preferred by underemployed people working part-time, and the hours usually worked by all employed people.

The volume underemployment rate also reached its peak in 2009. The volume underemployment rate for Victoria in August 2009 was 3.2%, compared to the underemployment rate of 8.0% (ABS catalogue number 6105.0)[3].

In Victoria in August 2009 there were 229,700 underemployed workers and 3.3 million hours of available labour, an average of more than 14 hours extra capacity per underemployed worker. As not all underemployed workers are seeking the same amount of hours, the volume underemployment rate provides a better measure of the number of hours available to the economy. The volume underemployment rate is usually lower than the (headcount) underemployment rate, as the average number of potential extra hours of underemployed people is less than the average hours actually worked by all employed people.

Back to top

Victorian Underemployed Workers in 2009

In September 2009 there were 216,000 underemployed workers in Victoria, accounting for 26.6% of all underemployed workers in Australia according to the Survey of Underemployed Workers. Of the underemployed workers in Victoria, the majority (198,400) were part-time workers who would prefer to work more hours. The remaining 17,500 were employed full-time but working part-time hours for economic reasons. In Victoria more underemployed workers would have preferred full-time hours than more part-time hours. Just over half (121,000) of underemployed workers would have preferred to work full-time hours and 94,900 would have preferred more part-time hours[4].

There were similar proportions of underemployed workers who worked 1 to 10 hours, 11 to 20 hours and 21 to 34 hours in the reference period. Around a third (36.6% or 78,900) of Victorian part-time workers worked 1 to 10 hours in the reference period, another third (31.3% or 67,600) worked 11 to 20 hours and a final third (32.1% or 69,300) worked 21 to 34 hours.

Figure 4 shows underemployed workers by the number of hours worked in the reference week and if they would have preferred to work part-time or full-time hours. Underemployed workers who would have preferred to work part-time hours in total worked a lower number of hours in the week prior to the survey and those who would have preferred to work full-time hours worked a higher number of hours. Over half (55.4% or 52,600) of underemployed workers who would prefer to work more part-time hours worked 1 to 10 hours in the reference period compared to one-fifth (21.7% or 26,300) of underemployed workers who would prefer full-time hours. Almost half (46.8% or 56,7000) of those who would have preferred full-time hours worked 21 to 34 hours in the reference period compared with 13.4% (12,700) of those who would have preferred more part-time hours.

4 UNDEREMPLOYED WORKERS WEEKLY PREFERRED TOTAL HOURS BY HOURS WORKED, Victoria— 2009

(a) Underemployed workers employed full-time working less than 35 hours due to economic reasons are not asked their preferred number of total hours. These figures are based on the assumption that underemployed workers who are employed full-time would prefer to be working full-time hours.

Source: Underemployed Workers, Australia, Sep 2009 (cat. no. 6265.0)–Customised data

Underemployed workers who would have preferred part-time hours and usually worked a small number of hours (less than 10 hours) were more likely to want fewer extra hours. Of those underemployed workers who would have preferred more part-time hours and usually worked less than 10 hours a week, around a quarter (26.5%) preferred an extra 1 to 5 hours a week compared to 16.9% who would have preferred an extra 21 to 29 hours.

The Survey of Underemployed Workers also collects information about the period for which the worker has been underemployed. In September 2009, around one third (34.4%) of underemployed workers had been underemployed for less than 13 weeks. 37.8% had been underemployed for between 13 weeks and one year and over a quarter (27.8%) had been underemployed for one year or more, representing a significant quantity of underutilised labour supply.

Seeking Work with More Hours

Around half (48.5% or 96,300) of all part-time underemployed workers looked for work with more hours in the four weeks preceding the survey. Common responses for part-time underemployed workers as their main difficulty in finding work with more hours were as follows: no vacancies in their line of work (18.9% or 18,200), no vacancies at all (13.1% or 12,600) and lacked necessary skills or education or insufficient work experience (10.1% or 9,700). Part-time underemployed workers were also asked about all the steps they had taken to find work with more hours. Respondents were allowed more than one answer. Almost two-thirds (62.4% or 60,000) of those part-time underemployed workers looking for work with more hours asked their employer for more work. Around half contacted prospective employers (51.7% or 49,800), searched internet sites (48.3% or 46,500) or looked in newspapers (44.3% or 42,600).

The majority of Victorian underemployed workers would have preferred not to change their employer or occupation in order to gain work with more hours, and would also not have moved to a different state or to a different location within Victoria if offered a suitable job with more hours. Almost two thirds (64.0% or 138,200) of underemployed workers would have preferred not to change their employer. Over half (56.8% or 122,700) would also have preferred not to change occupation. Two-thirds (67.1% or 144,800) of underemployed workers would not move intrastate if offered a suitable job and three-quarters (75.4% or 162,800) would not move interstate if offered a suitable job.

Experiences of Females and Males

Past studies have consistently shown that males and females experience underemployment differently (ABS 2010; Watson 2002; Wilkins 2007). According to data from the Labour Force Survey, females have experienced higher rates of underemployment than males, as shown in Figure 5. While the underemployment rates of both Victorian females and males have followed a similar trend, during the recent economic downturn the female underemployment rate increased more than the male underemployment rate. From May 2008 to August 2009 underemployment increased 1.5 percentage points to 10.1% for females and 1.3 percentage points to 6.2% for males. In the period to November 2010, the underemployment rate had decreased to slightly below pre-economic downturn levels for females (down 1.7 percentage points to 8.4%) but had not decreased as much for males (down 0.8 percentage points to 5.5%).

5 UNDEREMPLOYMENT RATE BY SEX, Victoria: **Trend**

Source: Labour Force, Australia (cat. no. 6202.0)–Table 22
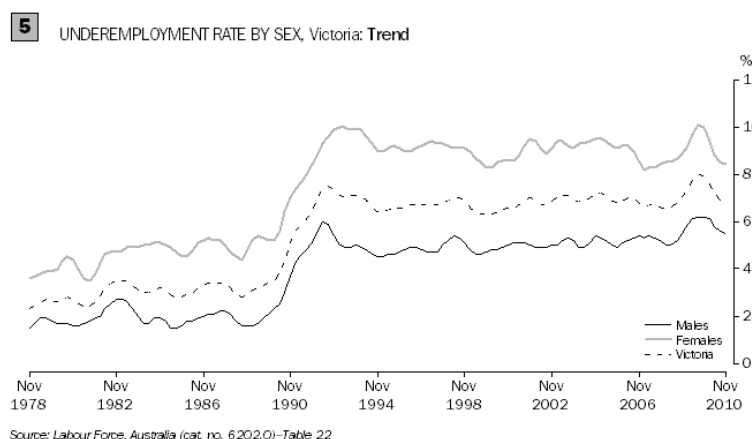
In Victoria in September 2009 the Survey of Underemployed Workers showed that there were more female underemployed workers (124,000) than male underemployed workers (92,000). There was also a distinctive difference in terms of part-time and full-time employment. Female underemployed workers were more likely to be employed part-time than male underemployed workers with 96.1% of female underemployed workers employed part-time compared with 86.3%

of male underemployed workers. Male underemployed workers were more likely to prefer to work full-time hours and female underemployed workers were more likely to prefer to work more part-time hours. Almost three-quarters (72.8% or 66,800) of underemployed males would have preferred to work full-time hours compared to 43.7% (54,200) of females. Conversely, over half (56.3% or 69,900) of underemployed females would have preferred to work more part-time hours compared to about one-quarter (27.2% or 25,000) of males.

Underemployed females and males followed a similar pattern for hours worked in the week prior to the survey. However males who would have preferred more part-time hours were more likely than females to work 1 to 10 hours in the reference period. Around three-quarters (74.0% or 18,500) of males who would have preferred more part-time hours worked 1 to 10 hours in the reference period compared to just under half (48.8% or 34,100) of females.

Not all underemployed workers look for more hours, and that differed by sex. Of the underemployed workers who were employed part-time, a higher proportion of males looked for work with more hours than females. 56.3% (44,500) of part-time underemployed males looked for work with more hours compared to 43.4% (51,700) of females. The steps taken by those underemployed workers looking for more work also differed for males and females, as shown in Figure 6. Of those who looked for work with more hours, females were more likely to ask their current employer for work with more hours (68.1% for females compared to 55.7% for males). However, males were more likely than females to register with Centrelink (23.7% and 10.7% respectively), contact an employment agency (25.3% and 9.4% respectively), look in newspapers (51.4% and 38.1% respectively) and search internet sites (52.3% and 44.8% respectively).

6 ALL STEPS TAKEN(a) BY PART-TIME UNDEREMPLOYED WORKERS TO FIND WORK WITH MORE HOURS, Victoria—2009

(a) More than one response category allowed.

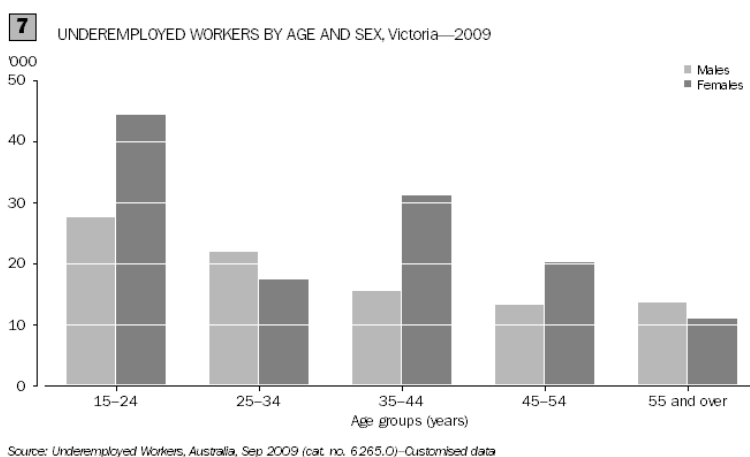Source: Underemployed Workers, Australia, Sep 2009 (cat. no. 6265.0)—Customised data
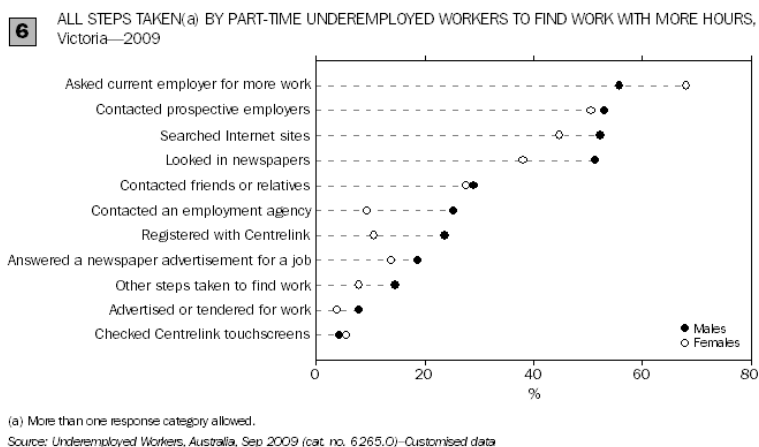
Similar rates of underemployed males and females would prefer not to change employers (61.6% and 65.8% respectively) or occupation (54.8% and 58.3% respectively) for work with more hours, and would not move within Victoria if offered a suitable job (64.6% and 68.9% respectively). However, underemployed males were more likely to move interstate if offered a suitable job with more hours (31.9%) than underemployed females (19.2%).

Back to top

Underemployment Across Age Groups

In September 2009 Victorian underemployed workers were largely a young population. Figure 7 shows the number of unemployed males and females in Victoria, across different age groups. A third of all underemployed workers were aged 15 to 24 years (33.3% or 71,900). Around one-fifth were aged 25 to 34 years (18.2% or 39,300) and a further one-fifth were aged 35 to 44 years (21.6% or 46,700). 15.4% (33,300) were aged 45 to 54 and 11.4% (24,700) were aged 55 years and over.

In the 15 to 24 and 35 to 44 year age groups there were considerably more female than male underemployed workers. In the 15 to 24 year age group, there were 44,400 underemployed females, compared with 27,500 underemployed males. In the 35 to 44 year age group, there were 31,000 underemployed females compared with 15,600 underemployed males.

7 UNDEREMPLOYED WORKERS BY AGE AND SEX, Victoria—2009

Source: Underemployed Workers, Australia, Sep 2009 (cat. no. 6265.0)—Customised data

The majority of underemployed workers were those employed part-time, however some age groups experienced lower rates of part-time employment. Male and female underemployed workers had similar rates of part-time employment across most age groups, except for the age groups of 35 to 44 and 45 to 54 years. Females were more likely to be employed part-time than males in both of these age groups. Nearly all (94.5%) underemployed females aged 35 to 54 were employed part-time compared to around three-quarters (73.2%) of males in the same age group.

Figure 8 shows Victorian underemployed workers by age group, and by their preferred total number of hours (part-time or full-time). The majority of underemployed workers aged 15 to 19 years and 55 years and over would prefer their total hours to be part-time (58.7% and 62.1% respectively). Young people enrolled in study are more likely to be employed part-time and older workers see part-time work as a transition to retirement (Abhayaratna, Andrews, Nuch and Podbury 2008). The majority of underemployed workers aged 20 to 54 would prefer to work full-time hours (61.9%). This was prominent for Victorian underemployed workers aged 25 to 34 years with two-thirds (68.3%) who would have preferred to work full-time hours. There is a distinctive gender split for this age group where the vast majority of males (89.6%) would have preferred their total hours to be full-time compared to the majority of females (58.5%), who would have preferred their total hours to be part-time. This age group contains the peak child bearing age (30 to 34) for women (ABS 2008) and may reflect that women in this age group may be balancing work and caring responsibilities.

8 UNDEREMPLOYED WORKERS BY PREFERRED TOTAL NUMBER OF HOURS AND AGE, Victoria—2009

(a) Underemployed workers preferring to work 34 hours or less per week.
(b) Underemployed workers preferring to work 35 hours or more per week.
(c) Includes underemployed full-time workers, who worked less than 35 hours in the
    reference period due to economic reasons.
Source: Underemployed Workers, Australia, Sep 2009 (cat. no. 6265.0)–Customised data

Underemployed workers in the youngest and oldest age groups were more likely to work less hours than underemployed workers in the other age groups. Around half of underemployed workers aged 15 to 19 years (56.5%) and 55 years and over (49.2%) worked 1 to 10 hours in the reference period, while 46.1% of underemployed workers aged 45 to 54 worked 21 to 34 hours in the reference period.

Older underemployed workers were less willing to change their employment occupation, employer or location within Victoria, as shown in Figure 9. Over two-thirds (69.4%) of underemployed workers aged 55 years and over would prefer not to change their occupation, around three-quarters (72.7%) would prefer not to change their employer and four-fifths (80.3%) would not move within Victoria to gain work with more hours. This is higher than underemployed workers aged 15 to 24 where 46.1% would prefer not to change occupation, 54.7% would prefer not to change employer and 61.9% would not move within Victoria.

9 UNDEREMPLOYED WORKERS BY PREFERENCES NOT TO CHANGE FOR WORK WITH MORE HOURS, Victoria—2009

Source: Underemployed Workers, Australia, Sep 2009 (cat. no. 6265.0)–Customised data
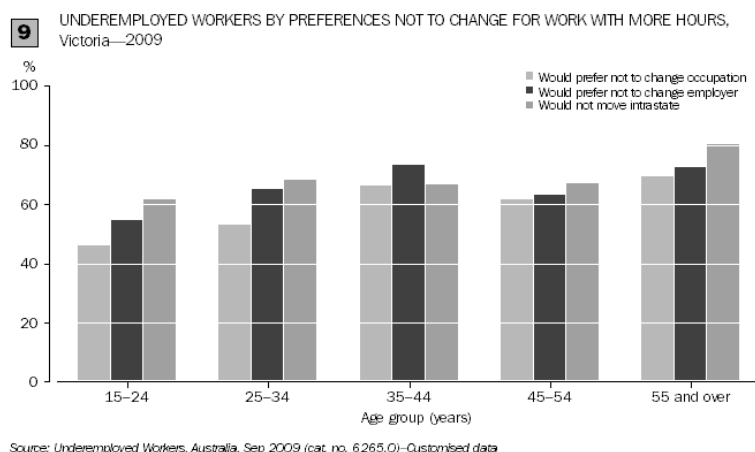
Conclusion

Examining underemployment has been an increasingly important aspect of understanding the impact of economic distress on the labour market. During the global financial crisis, the underemployment rate in Victoria reached its highest level in the past 32 years. In September 2009, the number of underemployed workers who would have preferred their total hours to be part-time was similar to the number who would have preferred their total hours to be full-time. Around half of Victorian underemployed workers were looking for work with more hours. Females and males experienced underemployment differently in 2009, especially in respect to full-time and part-time employment and the actions taken or those they would be willing to take in order to gain work with more hours. The majority of Victorian underemployed workers were aged 15 to 34 years, although differences across age groups were experienced in regard to preferred and current hours worked as well as what they would prefer to do (in terms of changing occupation, changing employer or moving) to gain work with more hours.

Examining Victorian underemployed workers gives insight into the impact of the global financial crisis at a local level as well as giving a broader understanding of financial distress on the labour market. Post global financial crisis, the Australian economy is relatively strong (ABS and RBA 2010). While it is too early to tell if the labour market has recovered, one indicator is the return of the underemployment rate to pre-economic downturn levels.

END NOTES

1 Those persons usually working more than 35 hours in the reference week are classified as employed full-time, as are those who usually work less than 35 hours in the reference week, but actually worked 35 hours or more in the reference week. Part-time employed persons are those who both **usually** work less than 35 hours per week and **actually** worked less than 35 hours in the reference week.

2 A recession is defined as two or more consecutive periods of negative growth.

3 For more information about volume measures of underemployment (and underutilisation), see the article Volume Measures of Labour Underutilisation, Australian Labour Market Statistics, Oct 2009 (ABS catalogue number 6105.0).

4 Underemployed workers employed full-time who worked less than 35 hours in the reference week due to economic reasons are not asked their preferred number of total hours. These figures are based on the assumption that underemployed workers who are employed full-time would prefer to be working full-time hours.

REFERENCES

Abhayaratna, J, Andrews, L, Nuch, H and Podbury, T 2008, Part Time Employment: the Australian Experience, Staff Working Paper, Productivity Commission, Melbourne.

Australian Bureau of Statistics (ABS) 2008, 'How Many Children Have Women in Australian Had?' in ABS, Australian Social Trends, 2008, cat. no. 4102.0, ABS, Canberra.

ABS 2009, Employee Arrangements, Retirement and Superannuation, Australia, 2007, cat. no. 6361.0, ABS, Canberra.

ABS and Reserve Bank of Australia (RBA) 2010, 'Feature Article: The Global Financial Crisis and its Impact on Australia' in ABS, Year Book Australia, 2009-10, cat. no. 3101.0, ABS, Canberra.

ABS 2010a, 'The Labour Market During Recent Economic Downturns' in ABS, Australian Social Trends, Mar 2010, cat. no. 4102.0, ABS, Canberra.

ABS 2010b, 'Underemployment' in ABS, Australian Social Trends, Jun 2010, cat. no. 4102.0, ABS, Canberra.

Campbell, I 2008, 'Pressing Towards Full Employment? The Persistence of Underemployment in Australia' Journal of Australian Political Economy, vol. 61, pp. 156-180.

Organisation for Economic Cooperation and Development (OECD) 2010, Employment Outlook 2010 - How does Australia compare?, OECD, viewed 10 December 2010, <http://www.oecd.org/dataoecd/14/38/45603025.pdf>.

Watson, I 2002, 'Wage inequality and Underemployment: Australia in the 1990s', Journal of Industrial Relations, vol. 44, no. 1. pp. 88-107.

Wilkins, R 2007, 'The Consequences of Underemployment for the Underemployed', Journal of Industrial Relations, vol. 49, no. 2, pp. 247-275.

Explanatory Notes

Explanatory Notes

EXPLANATORY NOTES

INTRODUCTION

1 This quarterly publication contains data from both ABS and non-ABS sources. The ABS publications referenced within **State and Regional Indicators, Victoria**, as well as the websites of non-ABS organisations, are listed in paragraphs 22 and 23. Users are directed to these references for further information.

REGIONAL AND SMALL AREA LABOUR FORCE ESTIMATES

2 The regions in Victoria for which the ABS produces estimates from the Labour Force Survey are revised at the time of the labour force sample redesign following each Census of Population and Housing and remain stable until the next labour force sample redesign. From November 2007, these regions are consistent with the SRs in the 2006 Edition of the ASGC. Consequently, the LGA boundary change between Melbourne (C) and Moonee Valley (C) is not reflected in LFS data. There were no changes to Victorian SR boundaries between 2001 and 2006 that involved population. For further information on LFS data at regional level, please see Information Paper: Regional Labour Force Statistics (cat. no. 6262.0). Maps of SRs used in the LFS can be found in Australian Labour Market Statistics, Jul 2009 (cat. no. 6105.0) on the Downloads page (6105.0 - Labour Force Region Maps - Victoria - 2007).

3 The quarterly small area unemployment rate estimates produced by DEEWR are based on the regions used by the ABS in the LFS. Even though there were no changes to Victorian SR boundaries between 2001 and 2006, there have been changes to LGA boundaries involving population which may have impacted on the small area unemployment rate time series. These boundary changes have been incorporated into the estimates for the smoothed series (the series included in this publication) from September quarter 2008, and have not been backcast to earlier periods. In Victoria, the affected LGAs are:

- Alpine (S) - previously included Falls Creek and Mount Hotham Alpine Resorts (estimated resident population of 163 at 30 June 2003);
- Benalla (RC) - previously part of Delatite (S);
- Mansfield (S) - previously part of Delatite (S); and
- Unincorporated Vic. - previously only French Island, now includes Falls Creek, Mount Baw Baw, Mount Buller and Mount Hotham Alpine Resorts.

4 Changes to SLA boundaries between 2001 and 2006 have affected the timing of the introduction of new LFS population benchmarks based on the 2006 Census of Population and Housing into the small area unemployment rate time series for the LGAs of Baw Baw (S), Campaspe (S), Colac-Otway (S), Greater Bendigo (C), Knox (C), Whittlesea (C) and Yarra Ranges (S). For these LGAs, the new benchmarks have been incorporated from September quarter 2008, which is two quarters later than other LGAs. The new benchmarks for Alpine (S) and Unincorporated Vic. have also been introduced from September quarter 2008.

5 The boundary changes to geographic areas and new population benchmarks described above were first introduced into the small area unemployment rate time series in March quarter 2009, with data for previous periods being revised back to either March quarter 2008 or September quarter 2008.

TOURISM REGIONS

6 Tourism Regions are defined by relevant state/territory tourism organisations and represent groups of SLAs. Each year, any changes to Tourism Regions (including SLA boundary changes incorporated in the current edition of the ASGC) are applied from the first reference period of the Survey of Tourist Accommodation in the following calendar year (i.e. the March quarter). For a map of Victorian Tourism Regions, and a listing of SLAs within each Tourism Region, please see Tourism Region Maps and Concordance Files, Australia (cat. no. 9503.0.55.001).

AIR QUALITY

7 The Environment Protection Authority (EPA) reports air quality as an index for any given pollutant as its concentration expressed as a percentage of the relevant standard. It enables easy interpretation of whether the pollutant is at a level which may cause harm. An index value of 100 means the pollutant is currently at a concentration equal to the National Environment Protection Measure (Air NEPM) or State Environment Protection Policy (The Air Environment) (SEPP) standard levels (levels designed to protect human health and the environment). Indexes are calculated separately for each measured pollutant: Ozone, Nitrogen Dioxide, Sulfur Dioxide, Carbon Monoxide, Fine Particulates (PM10), Visibility (Airborne Particle Index). For each station, the daily pollutant indexes are the maximum index values for that day. Note that not all pollutants are measured at each station. The EPA also calculates an overall Air Quality Index, which amalgamates each pollutant index into an overall measure of air quality at each station.

8 The air quality data have been provided for the Ozone and Visibility (or Airborne Particle) Indexes as these are the dominant pollutants and are widely measured across the EPA network. It should also be noted that meteorological conditions are a major determinant on the incidence of elevated pollutant levels. Hence significant daily, seasonal and annual variations can be expected in air quality. For more information on air quality, see the EPA web site.

9 The air quality index is converted into a qualitative scale with five commonly understood terms. Very good (0-33), Good (34-66) and Fair (67-99) represent measurements within the standards, while Poor (100-149) and Very poor (150+) represent measurements exceeding the standards.

10 For air quality reporting purposes the Port Phillip Region (PPR) has been divided into 4 regions: East, West, City and Geelong. Air monitoring stations assigned to each region are: East - Alphington, Brighton, Box Hill, Dandenong, Mooroolbark; City - RMIT, Richmond; West - Footscray, Melton, Point Cook, Paisley; Geelong - Point Henry, Geelong South. In addition, the Latrobe Valley has stations at Moe and Traralgon. The regional index is considered to be the maximum of the station indexes calculated within each particular region. The daily index reported for a region is the maximum region index recorded each day.

CHANGES IN CAPACITY OF WATER STORAGES

11 The capacity at full service level of Victoria's water storages changes periodically due to a number of factors including the commissioning and decommissioning of reservoirs, and the review of operational storage capacities of reservoirs. A summary of changes affecting capacity at full service level is given below.

- **December 2004:** Capacity of storages in Werribee and Maribyrnong basins reduced by 7 GL;
- **April 2005:** Capacity of Glenelg/Wimmera basin storages reduced by 24 GL;
- **January 2007:** Moondarra Reservoir (capacity 30 GL, initial storage volume 23 GL) added to the Thomson/Latrobe basin;
- **September 2008:** Glenmaggie Reservoir (Thomson/Latrobe basin) capacity reduced by 12 GL;
- **April 2009:** Lake Mokoan (Broken basin, capacity 365 GL) decommissioned;
- **June 2009:** Tarago Reservoir (capacity 38 GL, initial storage volume 22 GL) added to the Melbourne supply system.

GEOGRAPHY AND MAPS

12 Maps of SLAs, SSDs and SDs within Victoria can be found in Australian Standard Geographical Classification (ASGC), July 2009 (cat. no. 1216.0) on the Downloads page (1216.0 - 2009 ASGC - Victorian Maps). A listing of SLAs within each LGA (Local Government Areas and Statistical Local Areas - Alphabetic) can be accessed from the same page, along with listings of SLAs within each SD (Main Structure - Detailed) and Statistical Region (SR) (Statistical Region Structure - Detailed).

13 Unless otherwise indicated, boundaries of LGAs, SDs and SRs referred to in this publication are consistent with those in the 2009 Edition of the ASGC. The most recent change to an LGA boundary in Victoria was effective from 1 July 2008 and involved Melbourne (C) gaining 111.8 hectares (and 5,712 persons based on preliminary ERP at 30 June 2008) from Moonee Valley (C).

Thematic maps

14 This publication contains maps illustrating selected characteristics relating to the population in LGAs. For each map, five class intervals, each with a different colour shade, have been used to help interpret the distribution of the characteristic being mapped. LGAs with similar values are grouped in the same class, and the number of LGAs in each class will vary depending on the distribution of the population being mapped.

15 Each map contains a legend showing the colour and values for each class of the mapped data. For simplicity, the ranges are shown as, for example, '9-16' and '16-23'. These should be read as 'from 9 to less than 16' and 'from 16 to less than 23'. Individual values appear in one range only.

ABS PUBLICATIONS

16 The following ABS publications are referenced in this release of **State and Regional Indicators, Victoria**:

- **Retail Trade, Australia** (cat. no. 8501.0)
- **Labour Price Index, Australia** (cat. no. 6345.0)
- **Sales of New Motor Vehicles, Australia** (cat. no. 9314.0)
- **Australian Demographic Statistics** (cat. no. 3101.0)
- **Births, Australia** (cat. no. 3301.0)
- **Deaths, Australia** (cat. no. 3302.0)
- **Labour Force, Australia** (cat. no. 6202.0)
- **Labour Force, Australia, Detailed - Electronic Delivery** (cat. no. 6291.0.55.001)
- **Labour Force, Australia, Detailed, Quarterly** (cat. no. 6291.0.55.003)
- **Average Weekly Earnings, Australia** (cat. no. 6302.0)
- **Australian National Accounts: National Income, Expenditure and Product** (cat. no. 5206.0)
- **Consumer Price Index, Australia** (cat. no. 6401.0)
- **House Price Indexes: Eight Capital Cities** (cat. no. 6416.0)
- **Building Activity, Australia** (cat. no. 8752.0)
- **Building Approvals, Australia** (cat. no. 8731.0)
- **Engineering Construction Activity, Australia** (cat. no. 8762.0)
- **Tourist Accommodation, Small Area Data, Victoria** (cat. no. 8635.2.55.001)
- **Livestock Products, Australia** (cat. no. 7215.0)
- **Livestock and Meat, Australia** (cat. no. 7218.0.55.001)
- **International Trade in Goods and Services, Australia** (cat. no. 5368.0)

NON-ABS WEBSITES

17 The websites of the following organisations may provide further information on some of the data provided in this release of **State and Regional Indicators, Victoria**:

- Department of Education, Employment and Workplace Relations (DEEWR)
- Dairy Australia
- Environment Protection Authority, Victoria
- Department of Sustainability and Environment, Victoria

Glossary

GLOSSARY

Chain volume measures

Annually-reweighted chain Laspeyres volume price indexes referenced to the current price values in a chosen reference year (i.e. the year when the quarterly chain volume measures sum to the current price annual values). Chain Laspeyres volume measures are compiled by linking together (compounding) movements in volumes, calculated using the average prices of the previous financial year, and applying the compounded movements to the current price estimates of the reference year.

Generally, chain volume measures are not additive. In other words, component chain volume measures do not sum to a total in the way original current price components do. In order to minimize the impact of this property, the ABS uses the latest base year as the reference year. By adopting this approach, additivity exists for the period following the reference year and non-additivity is relatively small for the years immediately preceding. A change in reference year changes levels but not growth rates, although some revision to recent growth rates can be expected because of the introduction of a more recent base year (and revisions to the current price estimates underlying the chain volume measures).

Customs value

The value for import duty purposes determined by Customs. The primary basis for its establishment is the price actually paid or payable, provided a number of conditions are met. The most important is that the buyer and seller must be independent. If these conditions are not met World Trade Organization (WTO) rules are used to determine the Customs value. It is the prime valuation method used by ABS for disseminating international merchandise import statistics.

Deficit and surplus

A deficit occurs when the sum of all debit entries exceeds the sum of all credit entries, and a surplus occurs when the sum of all credit entries exceeds the sum of all debit entries. The term deficit (or surplus) can therefore be used in relation to various balances, e.g. balance of trade.

Duration of unemployment

The elapsed period to the end of the reference week since a person began looking for work, or since a person last worked for two weeks or more, whichever is the shorter. Brief periods of work (of less than two weeks) since the person began looking for work are disregarded.

Employed

Persons aged 15 years and over who, during the reference week:

- worked for one hour or more for pay, profit, commission or payment in kind, in a job or business or on a farm (comprising employees, employers and own account workers);
- worked for one hour or more without pay in a family business or on a farm (i.e. contributing family workers);
- were employees who had a job but were not at work and were:
    - away from work for less than four weeks up to the end of the reference week;
    - away from work for more than four weeks up to the end of the reference week and received pay for some or all of the four week period to the end of the reference week;
    - away from work as a standard work or shift arrangement;
    - on strike or locked out;
    - on workers' compensation and expected to return to their job;
- were employers or own account workers who had a job, business or farm, but were not at work.

Free on board

The value of goods measured on a free on board basis includes all production and other costs incurred up until the goods are placed on board the international carrier for export. Free on board values exclude international insurance and transport costs. They include the value of the outside packaging in which the product is wrapped, but do not include the value of the international freight containers used for transporting the goods.

Part-time workers

Employed persons who usually worked less than 35 hours a week (in all jobs) and either did so during the reference week, or were not at work in the reference week.

Particles as PM$_{10}$

Particles with an aerodynamic diameter of 10 micrometres or less.

Photochemical oxidants and ozone

'Photochemical oxidants' is the technical term for the type of smog found in Australian cities during the warmer months of the year. This type of smog can be invisible or it can appear as a whitish haze.

Photochemical oxidants are formed when sunlight falls on a mixture of chemicals in the air. Ozone is one of the main photochemical oxidants. Other chemicals such as formaldehyde are also found and, like ozone, have adverse health effects. Environment agencies measure the level of ozone because it indicates the total amount of photochemical oxidants in the air. Cities that have abundant sunshine over periods of time, together with moderate winds and high temperatures, are most likely to experience high levels of photochemical oxidants.

Ozone is a gas that is formed when nitrogen oxides react with a group of air pollutants known as 'reactive organic substances' in the presence of sunlight. The chemicals that react to form ozone come from sources such as: motor vehicle exhaust, oil refining, printing, petrochemicals, lawn mowing, aviation, bushfires and burning off. Motor vehicle exhaust fumes produce as much as 70% of the nitrogen oxides and 50% of the organic chemicals that form ozone. (Source: Australian Government Department of the Environment, Water, Heritage and the Arts, <http://www.environment.gov.au>)

Re-exports

Re-exports are defined as goods, materials or articles originally imported into Australia which are exported in either the same condition in which they were imported, or after undergoing some minor operations (e.g. blending, packaging, bottling, cleaning and sorting) which leave them essentially unchanged. Included in international merchandise export statistics.

Seasonal adjustment

A means of removing the estimated effects of normal seasonal variations from economic time series so that the effects of other influences are obvious. Seasonal variations are the systematic (though not necessarily regular) intra-year movements of economic time series. These are often the result of non-economic phenomena, such as climatic changes and regular religious festivals (e.g. Christmas and Easter).

State final demand

Conceptually identical to domestic final demand at the national level (the sum of private and government final consumption expenditure and private and public gross fixed capital formation).

National estimates are based on the concepts and conventions embodied in the System of National Accounts, 1993, but for regional (including state) estimates there is no separate international standard. Although national concepts are generally applicable to state accounts, there remain several conceptual and measurement issues that either do not apply or are insignificant nationally. Most of the problems arise in the measurement of gross state product for the transport and storage, communication services, and finance and insurance industries, where production often takes place across state borders. In these cases, a number of conceptual views can be applied to the allocation of value added by state. For more information, see chapter 28 of Australian System of National Accounts: Concepts, Sources and Methods (cat. no. 5216.0).

Trend estimates

Smoothing seasonally adjusted series produces a measure of trend by removing the impact of the irregular component of the series. The trend estimates are derived by applying a 13-term Henderson weighted moving average to the respective seasonally adjusted series. Readers are reminded that trend estimates are subject to revision as subsequent months' data become available.

Unemployed

Persons aged 15 years and over who were not employed during the reference week, and:

- had actively looked for full-time or part-time work at any time in the four weeks up to the end of the reference week and:
    - were available for work in the reference week;
    - were waiting to start a new job within four weeks from the end of the reference week, and could have started in the reference week if the job had been available then.

Abbreviations

ABBREVIATIONS

'000	thousand
$'000	thousand dollars
$m	million dollars
ABS	Australian Bureau of Statistics
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC06	Australian and New Zealand Standard Industrial Classification, 2006 Edition
ASGC	Australian Standard Geographical Classification
Aust.	Australia
B	Borough
BoV	Balance of Victoria
BPM6	Balance of Payments and International Investment Position Manual, Sixth Edition0
cat. no.	Catalogue number
C	City
COAG	Council of Australian Governments
CPI	Consumer Price Index
DEEWR	Australian Government Department of Education, Employment and Workplace Relations
DPS	Department of Parliamentary Services
excl.	excluding
EPA	Environment Protection Authority
ERP	estimated resident population
FT	full-time
GL	gigalitres
LFS	Labour Force Survey
LGA	local government area
m	million
MSR	major statistical region
n.e.c.	not elsewhere classified
no.	number
NEPM	National Environment Protection Measure
NSW	New South Wales
Pt	Part
qtr	quarter
Qld	Queensland
RC	Rural City
S	Shire
SD	statistical division
SEPP	State Environment Protection Policy
SESCA08	Standard Economic Sector Classifications of Australia 2008
SITC	Standard International Trade Classification
SLA	statistical local area
SNA08	System of National Accounts 2008 version
SNA93	System of National Accounts 1993
SR	statistical region
Vic.	Victoria
WA	Western Australia